COM-HM76

3rd Generation Intel[®] Core ™ i7/i5/i3 Processor Intel[®] HM76 Gigabit Ethernet 4 SATA 8 USB2.0, up to 4 USB3.0 1 PCI-E[x16], 7 PCI-E[x1] COM Express Basic Module

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Packing List

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

- 4 M2.5 Screw
- DVD-ROM for manual (in PDF format) and drivers
- 1 COM-HM76

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

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COM-HM76

Chapter

General Information

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1.1 Introduction

AAEON, a leading embedded board manufacturer, is pleased to announce the debut of their new generation COM Express Module: COM-HM76. The COM-HM76 is a cutting-edge product that provides high performance and low power consumption in the embedded market.

COM-HM76 adopts the latest Intel[®] 3rd generation Core[™] i7/i5/i3/Celeron[®] processor. The system memory deploys with one SODIMM 204-pin DDR3L 1333/1600 memory, up to 8 GB. In addition, Intel[®] 82579LM supports Gigabit Ethernet that allows faster network connections. This model applies seven PCI-Express[x1], one PCI-Express[x16], one LPC bus, one SMBus, and two UART. Moreover, four SATA ports are configured on the COM-HM76. COM-HM76 also equips eight USB2.0 (including four USB3.0) for flexible I/O expansions.

The display of COM-HM76 supports up to three independent displays simultaneously. This brand new COM Express Module is developed to cater to the requirements of Automation, Medical, ticket machine, transportation, gaming, KIOSK, and POS/POI applications.

1.2 Features

- Onboard 3rd Generation Intel[®] Core[™] i7/ i5/ i3 Processor
- Intel[®] HM76 PCH
- Single Channel SODIMM DDR3L 1333/1600 Memory,

Max.8 GB

- Gigabit Ethernet
- VGA x 1, DDI x 2, LVDS x 1 (18/24-bit Dual-channel LVDS LCD)
- High Definition Audio Interface
- SATA x 4
- USB2.0 x 8 (Including USB3.0 x 4)
- PCI-Express [x16] x 1 (Gen. 3.0), PCI-Express [x1] x 7 (Gen. 2.0)

Note: Configurable to PCI-Express[x8] Port x 2; Configurable to

PCI-Express[x8] Port x 1 and PCI-Express[x4] Port x 2

- DC Input Range, +12V
- COM Express Basic Module, Pin-out Type 6, COM.0 Rev.
 2.1

1.3 Specifications

System

•	Form Factor	COM Express Basic module, Pin-out Type 6, COM. 0 Rev. 2.1
•	Processor	Onboard 3rd Generation Intel [®] Core™ i7/i5/i3 Processor
•	System Memory	204-pin DDR3L SODIMM x 1, Max. 8GB (DDR3L 1333/1600), supports single channel function
•	Chipset	Intel [®] HM76
•	I/O Chipset	Intel [®] HM76 (Winbond SIO on the carrier board)
•	Ethernet	Intel [®] 82579LM, 10/100/1000Base-TX PHY
•	BIOS	AMI BIOS
		SPI type
•	EEPROM	FMD. FT24C02A, save BIOS and configuration data
•	Wake On LAN	Yes
•	BBS (BIOS Boot Spec.)	Yes
•	Watchdog Timer	ITE8518, 255 levels
•	H/W Status Monitoring	Supports CPU Temperature Monitoring
•	Expansion Interface	PCI-Express [x16] x 1
		PCI-Express [x1] x 7
		LPC bus x 1
		SMBus x 1
		UART x 2 (TX/RX only)
•	Power Requirement	+12V only
		2-pin wafer for RTC battery

COM Express Module	СОМ-НМ76
 Board Size Gross Weight Operating Temperature 	4.92" (L) x 3.75"(W) (125mm x 95mm) 0.66lb (0.3kg) 32°F ~ 140°F (0°C ~ 60°C)
• Storage Temperature	-40°F ~ 176°F (-40°C ~ 80°C)
• Operating Humidity	0% ~ 90% relative humidity, non-condensing
OS Support	Windows [®] 7, Windows [®] 8, Linux Fedora 16

Display

•	Chipset	3rd Generation Intel [®] Core™ i7/i5/i3 Processor Integrated
•	Memory	Shared system memory up to 512MB/ DVMT 5.0
•	Resolution	Up to 2560 x 2048 for CRT
		Up to 1920 x 1200 for LVDS
•	LCD Interface	Up to 24-bit dual-channel LVDS, VGA

I/O

•	Storage	SATA x 4
•	Serial Port	From LPC to EC, then to the carrier board (EC x 2)
•	USB	USB2.0 x 8 (including USB 3.0 x 4)
•	Audio	High definition audio
•	GPIO	Up to 4 in and 4 out



Quick Installation Guide

Chapter 2 Quick Installation Guide 2-1

2.1 Safety Precautions



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

Caution!



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

2.2 Mechanical Drawings of Connectors and Switches

Component Side





2.3 List of Switch

There is a switch on the board that allows you to configure your system to suit your application. The table below shows the function of the switch.

Label	Function
SW1	AT/ATX Setting Switch

2.4 List of Connectors

There are a number of connectors of the board that allow you to configure your system to suit your application. The table below shows the function of each connector in the board:

Label	Function
DIMM1	SODIMM COM
CN3	RTC Battery Connector
CN4	Express ROW C/D Connector
CN5	Express ROW A/B Connector
CN6	RSVD Connector
CN7	SPI Flash Programming Connector
CN8	LPC Debug Card Connector

2.5 AT/ATX Setting Switch (SW1)

	ON	OFF
1	AT Selection	ATX Selection
2	ME_EN	ME_DIS

2.6 COM Express ROW C/D Connector (CN4)

Row C		Row D	
C1	GND (FIXED)	D1	GND (FIXED)
C2	GND (FIXED)	D2	GND (FIXED)
C3	USB_SSRX0-	D3	USB_SSTX0-
C4	USB_SSRX0+	D4	USB_SSTX0+
C5	GND (FIXED)	D5	GND (FIXED)
C6	USB_SSRX1-	D6	USB_SSTX1-
C7	USB_SSRX1+	D7	USB_SSTX1+
C8	GND (FIXED)	D8	GND (FIXED)
C9	USB_SSRX2-	D9	USB_SSTX2-
C10	USB_SSRX2+	D10	USB_SSTX2+
C11	GND (FIXED)	D11	GND (FIXED)
C12	USB_SSRX3-	D12	USB_SSTX3-
C13	USB_SSRX3+	D13	USB_SSTX3+
C14	GND (FIXED)	D14	GND (FIXED)
C15	DDI1_PAIR6+	D15	DDI1_CTRLCLK_AU X+
C16	DDI1_PAIR6-	D16	DDI1_CTRLDATA_A UX-

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C17	RSVD	D17	RSVD
C18	RSVD	D18	RSVD
C19	PCIE_RX6+	D19	PCIE_TX6+
C20	PCIE_RX6-	D20	PCIE_TX6-
C21	GND (FIXED)	D21	GND (FIXED)
C22	PCIE_RX7+	D22	PCIE_TX7+
C23	PCIE_RX7-	D23	PCIE_TX7-
C24	DDI1_HPD	D24	RSVD
C25	DDI1_PAIR4+	D25	RSVD
C26	DDI1_PAIR4-	D26	DDI1_PAIR0+
C27	RSVD	D27	DDI1_PAIR0-
C28	RSVD	D28	RSVD
C29	DDI1_PAIR5+	D29	DDI1_PAIR1+
C30	DDI1_PAIR5-	D30	DDI1_PAIR1-
C31	GND (FIXED)	D31	GND (FIXED)
C32	DDI2_CTRLCLK_A UX+	D32	DDI1_PAIR2+
C33	DDI2_CTRLDATA_ AUX-	D33	DDI1_PAIR2-
C34	DDI2_DDC_AUX_ SEL	D34	DDI1_DDC_AUX_SE L
C35	RSVD	D35	RSVD
C36	DDI3_CTRLCLK_A UX+	D36	DDI1_PAIR3+
C37	DDI3_CTRLDATA_ AUX-	D37	DDI1_PAIR3-
C38	DDI3_DDC_AUX_ SEL	D38	RSVD
C39	DDI3_PAIR0+	D39	DDI2_PAIR0+

C40	DDI3_PAIR0-	D40	DDI2_PAIR0-
C41	GND (FIXED)	D41	GND (FIXED)
C42	DDI3_PAIR1+	D42	DDI2_PAIR1+
C43	DDI3_PAIR1-	D43	DDI2_PAIR1-
C44	DDI3_HPD	D44	DDI2_HPD
C45	RSVD	D45	RSVD
C46	DDI3_PAIR2+	D46	DDI2_PAIR2+
C47	DDI3_PAIR2-	D47	DDI2_PAIR2-
C48	RSVD	D48	RSVD
C49	DDI3_PAIR3-	D49	DDI2_PAIR3+
C50	DDI3_PAIR3-	D50	DDI2_PAIR3-
C51	GND (FIXED)	D51	GND (FIXED)
C52	PEG_RX0+	D52	PEG_TX0+
C53	PEG_RX0-	D53	PEG_TX0-
C54	TYPE0#	D54	PEG_LAN_RV#
C55	PEG_RX1+	D55	PEG_TX1+
C56	PEG_RX1-	D56	PEG_TX1-
C57	TYPE1#	D57	TYPE2#
C58	PEG_RX2+	D58	PEG_TX2+
C59	PEG_RX2-	D59	PEG_TX2-
C60	GND (FIXED)	D60	GND (FIXED)
C61	PEG_RX3+	D61	PEG_TX3+
C62	PEG_RX3-	D62	PEG_TX3-
C63	RSVD	D63	RSVD

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C64 RSVD D64 RSVD C65 PEG_RX4+ D65 PEG_TX4+ C66 PEG_RX4- D66 PEG_TX4- C67 RSVD D67 GND (FIXED) C68 PEG_RX5+ D68 PEG_TX5+ C69 PEG_RX5- D69 PEG_TX5- C70 GND (FIXED) D70 GND (FIXED) C71 PEG_RX6+ D71 PEG_TX6+ C72 PEG_RX6- D72 PEG_TX6+ C73 GND (FIXED) D73 GND (FIXED) C74 PEG_RX7+ D74 PEG_TX7+ C75 PEG_RX7- D75 PEG_TX7+ C76 GND (FIXED) D76 GND (FIXED) C77 RSVD D77 RSVD C78 PEG_RX8+ D78 PEG_TX8+ C79 PEG_RX8+ D79 PEG_TX8+ C79 PEG_RX8+ D79 PEG_TX8+ C80 GND (FIXED) D80 GND (FIXED)				
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C81 PEG_RX9+ D81 PEG_TX9+ C82 PEG_RX9- D82 PEG_TX9- C83 RSVD D83 RSVD C84 GND (FIXED) D84 GND (FIXED) C85 PEG_RX10+ D85 PEG_TX10+ C86 PEG_RX10- D86 PEG_TX10- C87 GND (FIXED) D87 GND (FIXED)	C80	GND (FIXED)	D80	GND (FIXED)
C82 PEG_RX9- D82 PEG_TX9- C83 RSVD D83 RSVD C84 GND (FIXED) D84 GND (FIXED) C85 PEG_RX10+ D85 PEG_TX10+ C86 PEG_RX10- D86 PEG_TX10- C87 GND (FIXED) D87 GND (FIXED)	C81	PEG_RX9+	D81	PEG_TX9+
C83 RSVD D83 RSVD C84 GND (FIXED) D84 GND (FIXED) C85 PEG_RX10+ D85 PEG_TX10+ C86 PEG_RX10- D86 PEG_TX10- C87 GND (FIXED) D87 GND (FIXED)	C82	PEG_RX9-	D82	PEG_TX9-
C84 GND (FIXED) D84 GND (FIXED) C85 PEG_RX10+ D85 PEG_TX10+ C86 PEG_RX10- D86 PEG_TX10- C87 GND (FIXED) D87 GND (FIXED)	C83	RSVD	D83	RSVD
C85 PEG_RX10+ D85 PEG_TX10+ C86 PEG_RX10- D86 PEG_TX10- C87 GND (FIXED) D87 GND (FIXED)	C84	GND (FIXED)	D84	GND (FIXED)
C86 PEG_RX10- D86 PEG_TX10- C87 GND (FIXED) D87 GND (FIXED)	C85	PEG_RX10+	D85	PEG_TX10+
C87 GND (FIXED) D87 GND (FIXED)	C86	PEG_RX10-	D86	PEG_TX10-
	C87	GND (FIXED)	D87	GND (FIXED)

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C88	PEG_RX11+	D88	PEG_TX11+
C89	PEG_RX11-	D89	PEG_TX11-
C90	GND (FIXED)	D90	GND (FIXED)
C91	PEG_RX12+	D91	PEG_TX12+
C92	PEG_RX12-	D92	PEG_TX12-
C93	GND	D93	GND
C94	PEG_RX13+	D94	PEG_TX13+
C95	PEG_RX13-	D95	PEG_TX13-
C96	GND (FIXED)	D96	GND (FIXED)
C97	RSVD	D97	RSVD
C98	PEG_RX14+	D98	PEG_TX14+
C99	PEG_RX14-	D99	PEG_TX14-
C100	GND (FIXED)	D100	GND (FIXED)
C101	PEG_RX15+	D101	PEG_TX15+
C102	PEG_RX15-	D102	PEG_TX15-
C103	GND (FIXED)	D103	GND
C104	VCC_12V	D104	VCC_12V
C105	VCC_12V	D105	VCC_12V
C106	VCC_12V	D106	VCC_12V
C107	VCC_12V	D107	VCC_12V
C108	VCC_12V	D108	VCC_12V
C109	VCC_12V	D109	VCC_12V
C110	GND (FIXED)	D110	GND (FIXED)

2.7 COM Express ROW A/B Connector (CN5)

Row A		Row B	
A1	GND (FIXED)	B1	GND (FIXED)
A2	GBE0_MDI3-	B2	GBE0_ACT#
A3	GBE0_MDI3+	B3	LPC_FRAME#
A4	GBE0_LINK100#	B4	LPC_AD0
A5	GBE0_LINK1000#	B5	LPC_AD1
A6	GBE0_MDI2-	B6	LPC_AD2
A7	GBE0_MDI2+	B7	LPC_AD3
A8	GBE0_LINK	B8	LPC_DRQ0#
A9	GBE0_MDI1-	B9	LPC_DRQ1#
A10	GBE0_MDI1+	B10	LPC_CLK
A11	GND (FIXED)	B11	GND (FIXED)
A12	GBE0_MDI0-	B12	PWRBTN#
A13	GBE0_MDI0+	B13	SMB_CK
A14	GBE0_CTREF	B14	SMB_DAT
A15	SUS_S3#	B15	SMB_ALERT#
A16	SATA0_TX+	B16	SATA1_TX+
A17	SATA0_TX-	B17	SATA1_TX-
A18	SUS_S4#	B18	SUS_STAT#
A19	SATA0_RX+	B19	SATA1_RX+
A20	SATA0_RX-	B20	SATA1_RX-
A21	GND (FIXED)	B21	GND (FIXED)

A22	SATA2_TX+	B22	SATA3_TX+
A23	SATA2_TX-	B23	SATA3_TX-
A24	SUS_S5#	B24	PWR_OK
A25	SATA2_RX+	B25	SATA3_RX+
A26	SATA2_RX-	B26	SATA3_RX-
A27	BATLOW#	B27	WDT
A28	ATA_ACT#	B28	AC_SDIN2
A29	AC_SYNC	B29	AC_SDIN1
A30	AC_RST#	B30	AC_SDIN0
A31	GND (FIXED)	B31	GND (FIXED)
A32	AC_BITCLK	B32	SPKR
A33	AC_SDOUT	B33	I2C_CK
A34	BIOS_DIS0#	B34	I2C_DAT
A35	THRMTRIP#	B35	THRM#
A36	USB6-	B36	USB7-
A37	USB6+	B37	USB7+
A38	USB_6_7_OC#	B38	USB_4_5_OC#
A39	USB4-	B39	USB5-
A40	USB4+	B40	USB5+
A41	GND (FIXED)	B41	GND (FIXED)
A42	USB2-	B42	USB3-
A43	USB2+	B43	USB3+
A44	USB_2_3_OC#	B44	USB_0_1_OC#
A45	USB0-	B45	USB1-

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A46	USB0+	B46	USB1+
A47	VCC RTC	B47	EXCD1 PERST#
A48	EXCD0 PERST#	B48	EXCD1 CPPE#
A49	EXCD0 CPPE#	B49	SYS RESET#
A50	LPC SERIRQ	B50	 CB_RESET#
A51	GND (FIXED)	B51	GND (FIXED)
A52	PCIE TX5+	B52	PCIE RX5+
A53	PCIE TX5-	B53	PCIE RX5-
A54	GPI0	B54	GPO1
A55	PCIE TX4+	B55	PCIF RX4+
A56	PCIE TX4-	B56	PCIE RX4-
A57		B57	GPO2
A58	PCIE TX3+	B58	PCIE RX3+
A59	PCIE_TX3-	B59	PCIE RX3-
A60		B60	
A61	PCIE TX2+	B61	PCIE RX2+
A62	PCIE TX2-	B62	PCIE RX2-
A63	GPI1	B63	GPO3
A64	PCIE TX1+	B64	PCIE RX1+
A65	PCIE_TX1-	B65	PCIE RX1-
A66		B66	WAKEO#
Δ67	GPI2	B67	
A69		B69	
A00		DOO	
A69	PCIE_1X0-	B69	PUIE_RX0-

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A70	GND (FIXED)	B70	GND (FIXED)
A71	LVDS_A0+	B71	LVDS_B0+
A72	LVDS_A0-	B72	LVDS_B0-
A73	LVDS_A1+	B73	LVDS_B1+
A74	LVDS_A1-	B74	LVDS_B1-
A75	LVDS_A2+	B75	LVDS_B2+
A76	LVDS_A2-	B76	LVDS_B2-
A77	LVDS_VDD_EN	B77	LVDS_B3+
A78	LVDS_A3+	B78	LVDS_B3-
A79	LVDS_A3-	B79	LVDS_BKLT_EN
A80	GND (FIXED)	B80	GND (FIXED)
A81	LVDS_A_CK+	B81	LVDS_B_CK+
A82	LVDS_A_CK-	B82	LVDS_B_CK-
A83	LVDS_I2C_CK	B83	LVDS_BKLT_CTRL
A84	LVDS_I2C_DAT	B84	VCC_5V_SBY
A85	GPI3	B85	VCC_5V_SBY
A86	RSVD	B86	VCC_5V_SBY
A87	RSVD	B87	VCC_5V_SBY
A88	PCIE0_CK_REF+	B88	BISO_DIS1#
A89	PCIE0_CK_REF-	B89	VGA_RED
A90	GND (FIXED)	B90	GND (FIXED)
A91	SPI_POWER	B91	VGA_GRN
A92	SPI_MISO	B92	VGA_BLU
A93	GPO0	B93	VGA_HSYNC

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A94	SPI_CLK	B94	VGA_VSYNC
A95	SPI_MOSI	B95	VGA_I2C_CK
A96	TPM_PP	B96	VGA_I2C_DAT
A97	TYPE10#	B97	SPI_CS#
A98	SER0_TX	B98	RSVD
A99	SER0_RX	B99	RSVD
A100	GND (FIXED)	B100	GND (FIXED)
A101	SER1_TX	B101	FAN_PWNOUT
A102	SER1_RX	B102	FAN_TACHIN
A103	LID#	B103	SLEEP#
A104	VCC_12V	B104	VCC_12V
A105	VCC_12V	B105	VCC_12V
A106	VCC_12V	B106	VCC_12V
A107	VCC_12V	B107	VCC_12V
A108	VCC_12V	B108	VCC_12V
A109	VCC_12V	B109	VCC_12V
A110	GND (FIXED)	B110	GND (FIXED)

COM-HM76

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

AAEON Main Board/ Daughter Board/ Backplane

	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		0	0
及其电子组件		0	0		0	0
外部信号		0	0			0
连接器及线材		0	0		0	0
 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小在该部件的某一物质材料中的含量超出 						

SJ/T 11363-2006 标准规定的限量要求。

备注: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。



AMI BIOS Setup

Chapter 3 AMI BIOS Setup 3-1

3.1 System Test and Initialization

These routines test and initialize board hardware. If the routines encounter an error during these tests, you will either hear a few short beeps or see an error message on the screen. There are two kinds of errors: fatal or 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 COM-HM76 CMOS memory has an integral lithium battery backup for data retention. However, you will need to replace the

complete unit when it finally runs down.

3.2 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.

Chipset

Host bridge parameters.

Boot

Enables/disable quiet boot option.

Security

Set setup administrator password.

Save&Exit

Exit system setup after saving the changes.

Setup Menu

Setup submenu: Main

Aptio Setup Utility – Copyright (C) 2011 American Megatrends, Inc. Main Advanced Chipset Boot Security Save & Exit				
BIOS Information COM-HM76 R1.0(CM76CM10) (04/29/	2014)	Set the Date. Use Tab to switch between Date elements.		
BIOS Vendor Core Version Compliancy Firmware VENDOR Firmware Information Firmware Version Build Date	American Megatrends 4.6.5.3 UEFI 2.3; PI 1.2 AAEON Mother Board CM76AEO4 1/8/2014			
System Date System Time Access Level	[Thu 01/01/2009] [00:39:14] Administrator	++: Select Screen 14: Select Item Enter: Select +/-: Change Opt, F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit		
Vencion 2 14 1219 C	opunight (C) 2011 Amonicon M	oratnondo. Inc		

Setup submenu: Advanced

Aptio Setup Util. Main Advanced Chipset Boot	ity – Copyright (C) 2011 American Security Save & Exit	Megatrends, Inc.
 S5 RTC Wake Settings CPU Configuration SATA Configuration USB Configuration On-Module ID Configuration On-Module H/W Monitor Dynamic Digital ID 		Enable system to wake from S5 using RTC alarm
		<pre>++: Select Screen T4: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
Version 2.14.12	19. Copyright (C) 2011 American M	egatrends, Inc.

S5 RTC Wake Settings (Fixed Time)

Aptio Setup Utility Advanced	– Copyright (C) 2012 Amer	ican Megatrends, Inc.
Hake system with Fixed Time Wake up day Wake up hour Wake up minute Wake up second	[Enabled] O O O O	Enable or disable System wake on alarm event. When enabled, System will wake on the hr::min::sec specified
Wake system with Dynamic Time	[Disabled]	
		<pre>++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
Version 2.15.1226.	Copyright (C) 2012 Americ	an Megatrends, Inc.

Options summary:

Wake system with	Disabled	Optimal Default, Failsafe Default	
Fixed Time	Enabled		
En/Disable System	wake on alarm event. When	n enabled, System will wake on the	
hr:min:sec specified	ł		
Wake up day	0-31	Default 0	
Select 0 for daily system wake up, 1-31 for witch day of the moth that you would like			
the system to wake up.			
Wake up day	0-23	Default 0	
Select 0-23 For example enter 3 for 3am and 15 for 3pm			
Wake up day	0-59	Default 0	
Select 0-59			
Wake up day	0-59	Default 0	
Select 0-59			

S5 RTC Wake Settings (Dynamic Time)

Aptio Setup Utility Advanced	ı – Copyright (C) 2012 Am	merican Megatrends, Inc.
Wake system with Fixed Time	[Disabled]	Enable or disable System wake
Wake system with Dynamic Time Wake up minute increase	(Enabled) 1	System will wake on the current time + Increase minute(s)
		++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.15.1226.	Copyright (C) 2012 Amer	rican Megatrends, Inc.

Options summary:

Wake system with	Disabled	Optimal Default, Failsafe Default	
Dynamic Time	Enabled		
En/Disable System wake on alarm event. When enabled, System will wake on current time + Increases minutes(s)			
Wake up day	1-5	Default 1	
Select 1-5			

C O M - H M 7 6

CPU Configuration

CPU ConfigurationEnabled for Windows XP and Linux (OS optimized for Hyper-Threading Technology)Intel(R) Core(TM) 17-3610QE CPU @ 2.30GHz CPU SignatureSocial 30648Microcode Patch10 Max CPU Speed100 Hz 2000 MHzMin CPU Speed1200 MHz 1200 MHzHyper-Threading Technology).Min CPU Speed1200 MHz 1200 MHzHyper-Threading Technology).Processor Cores4 Intel HT TechnologySupported SupportedIntel VT-x TechnologySupported Supported+: Select Screen 11: Select Item Enter: Select +/-: Change Opt.L1 Data Cache32 kB x 4 L2 Cache256 kB x 4 6144 kBL2 Cache256 kB x 4 6144 kBFi: General Help F2: Previous Values F3: Optimized Defaults F4: Save & ExitHyper-threading[Enabled] Intel Virtualization Technology[Disabled] [Disabled] Hardware PrefetcherHardware Prefetcher[Enabled]+	Aptio Setup Utilit Advanced	y – Copyright (C) 2011	. American Megatrends, Inc.
Intel(R) Core(TM) 17-3610QE CPU @ 2.30GHzIntel(R) Core(TM) 17-3610QE CPU @ 2.30GHzCPU Signature306a6Microcode Patch10Max CPU Speed2300 MHzWin CPU Speed1200 MHzCPU Speed1200 MHzProcessor Cores4Intel HT TechnologySupportedIntel MT TechnologySupportedG4-bit32 KB x 4L1 Data Cache32 KB x 4L2 Cache256 KB x 4L2 Cache256 KB x 4L3 Cache6144 kBHyper-threading[Enabled]Hyper-threading[Enabled]Active Processor Cores[All]Li Dia Cache[Enabled]Hyper-threading[Enabled] <td>CPU Configuration</td> <td></td> <td>Enabled for Windows XP and</td>	CPU Configuration		Enabled for Windows XP and
InterferInterferInterferInterferInterferCPU Signature00688Microcode Patch10Max CPU Speed2300 MHzHyper-Threading Technology)Min CPU Speed1200 MHzCPU Speed1200 MHzCPU Speed1200 MHzProcessor Cores4Intel HT TechnologySupportedIntel HT TechnologySupportedIntel MT TechnologySupportedIntel AT Select32 KB x 4L1 Data Cache32 KB x 4L2 Cache256 KB x 4L3 Cache6144 kBHyper-threading[Enabled]Active Processor Cores[All]Active Processor Cores[All]Execute Disable Bit[Enabled]Intel Virtualization Technology[Disabled]Hyper-threading[Enabled]Hyper-threading[Enabled]Hull Could State[Enabled]Hyper-threading[Enabled]Hyper-threading[Enabled]Hyper-threading[Enabled]Hyper-threading[Enabled]Hyper-threading[Enabled]Hyper-threading[Enabled]Hyper-threading[Enabled]Hyper-threading[Enabled]Hyper-threading[Enabled]Hyper-threading[Enabled]Hyper-threading[Enabled]Hyper-threading[Enabled]Hyper-threading[Enabled]Hyper-threading[Enabled]Hyper-threading[Enabled]Hyper-threading <t< td=""><td>Total(P) Capa(TM) 17 26100E CPU</td><td>A 2 2004-</td><td>Linux (US optimized for Human Threading Technology)</td></t<>	Total(P) Capa(TM) 17 26100E CPU	A 2 2004-	Linux (US optimized for Human Threading Technology)
Hicrocode Patch 10 Max CPU Speed 2300 MHz Min CPU Speed 1200 MHz Processor Cores 4 Intel HT Technology Supported Intel VT-x Technology Supported Intel VT-x Technology Supported Intel VT-x Technology Supported L1 Data Cache 32 kB x 4 L2 Cache 256 kB x 4 L3 Cache 6144 kB Hyper-threading [Enabled] Active Processor Cores [All] Linit CPUD Maximum [Disabled] Hyper-threading [Enabled] Huger-threading [Enabled] <td>CPU Signature</td> <td>306a8</td> <td>and Disabled for other OS (OS</td>	CPU Signature	306a8	and Disabled for other OS (OS
Max CPU Speed2300 MHzMin CPU Speed1200 MHzCPU Speed1200 MHzCPU Speed1200 MHzProcessor Cores4Intel NT TechnologySupportedIntel VT-x TechnologySupportedIntel SMX TechnologySupportedL1 Data Cache32 kB x 4L1 Code Cache32 kB x 4L2 Cache256 kB x 4L3 Cache6144 kBHyper-threading[Enabled]Hyper-threading[Enabled]Limit CPUID Maximum[Disabled]Execute Disable Bit[Enabled]Intel Virtualization Technology[Disabled]Hyper-threading[Enabled]Intel Virtualization Technology[Disabled]Hardware Prefetcher[Enabled]	Microcode Patch	10	not ontimized for
Min CPU Speed1200 MHzCPU Speed1200 MHzProcessor Cores4Processor Cores4Intel HT TechnologySupportedIntel VT-x TechnologySupported64-bitSupportedL1 Data Cache32 KB x 4L2 Cache256 KB x 4L3 Cache6144 KBHyper-threading[Enabled]Hyper-threading[Enabled]Active Processor Cores[All]Execute Disable Bit[Enabled]Intel Virtualization Technology[Disabled]Hardware Prefetcher[Enabled]	Max CPU Speed	2300 MHz	Huper-Threading Technology).
CPU Speed1200 MHzProcessor Cores4Intel HT TechnologySupportedIntel VT-x TechnologySupportedIntel SMX TechnologySupported64-bitSupportedL1 Data Cache32 KB x 4L1 Code Cache32 KB x 4L2 Cache256 KB x 4L3 Cache6144 KBHyper-threading[Enabled]Active Processor Cores[All]Execute Disable Bit[Enabled]Lint CPUD Maximum[Disabled]Execute Disable Bit[Enabled]Hardware Prefetcher[Enabled]	Min CPU Speed	1200 MHz	When Disabled only one thread
Processor Cores 4 Intel HT Technology Supported Intel VT-x Technology Supported Intel SWX Technology Supported 64-bit Supported L1 Data Cache 32 kB x 4 L1 Code Cache 32 kB x 4 L2 Cache 25 kB x 4 L3 Cache 6144 kB Hyper-threading [Enabled] Active Processor Cores [All] Lint CPUID Maximum [Disabled] Execute Disable Bit [Enabled] Intel Virtualization Technology [Disabled] Hardware Prefetcher [Enabled]	CPU Speed	1200 MHz	per enabled core is enabled.
Intel HT Technology Supported Intel VT-x Technology Supported 64-bit Supported L1 Data Cache 32 kB x 4 L1 Code Cache 32 kB x 4 L2 Cache 256 kB x 4 L3 Cache 6144 kB Hyper-threading [Enabled] Hyper-threading [Enabled] Limit CPUID Maximum [Disabled] Execute Disable Bit [Enabled] Intel Virtualization Technology [Disabled]	Processor Cores	4	
Intel VT-x Technology Supported Intel SMX Technology Supported 64-bit Supported L1 Data Cache 32 kB x 4 L1 Code Cache 32 kB x 4 L2 Cache 256 kB x 4 L3 Cache 6144 kB Hyper-threading [Enabled] Active Processor Cores [Ail] Linit CPUID Maximum [Disabled] Execute Disable Bit [Enabled] Intel Virtualization Technology [Disabled] Hardware Prefetcher [Enabled]	Intel HT Technology	Supported	
Intel SMX Technology Supported 64-bit Supported L1 Data Cache 32 kB x 4 L1 Code Cache 32 kB x 4 L1 Code Cache 32 kB x 4 L2 Cache 256 kB x 4 Hyper-threading [Enabled] Active Processor Cores [All] Execute Disable Bit [Enabled] Intel Virtualization Technology [Disabled] Hardware Prefetcher [Enabled]	Intel VT–x Technology	Supported	
64-bit Supported L1 Data Cache 32 KB x 4 L1 Code Cache 32 KB x 4 L1 Code Cache 32 KB x 4 L2 Cache 256 KB x 4 L3 Cache 256 KB x 4 Hyper-threading [Enabled] Hyper-threading [Enabled] Fi: General Help F2: Previous Values Hyper-threading [Enabled] Execute Disable Bit [Enabled] Intel Virtualization Technology [Disabled] Hardware Prefetcher [Enabled]	Intel SMX Technology	Supported	
L1 Data Cache 32 kB x 4 L1 Code Cache 32 kB x 4 L2 Cache 32 kB x 4 L2 Cache 256 kB x 4 L3 Cache 6144 kB Hyper-threading [Enabled] Hyper-threading [Enabled] Limit CPUID Maximum [Disabled] Execute Disable Bit [Enabled] Intel Virtualization Technology [Disabled]	64-bit	Supported	
L1 Data Cache 32 KB x 4 14: Select Item L1 Code Cache 32 KB x 4 Enter: Select L2 Cache 256 KB x 4 +/-: Change Opt. L3 Cache 6144 KB F1: General Help Hyper-threading [Enabled] F2: Previous Values Hyper-threading [Enabled] F3: Optimized Defaults Active Processor Cores [Ail] F4: Save & Exit Limit CPUID Maximum [Disabled] Execute Disable Bit [Enabled] Intel Virtualization Technology [Disabled] Hardware Prefetcher [Enabled]			++: Select Screen
L1 Code Cache 256 kB x 4 ch/-: Change Opt. L2 Cache 6144 kB F1: General Help Hyper-threading [Enabled] F3: Optimized Defaults Active Processor Cores [All] Limit CPUID Maximum [Disabled] Execute Disable Bit [Enabled] Intel Virtualization Technology [Disabled] Hardware Prefetcher [Enabled] v	L1 Data Cache	32 KB X 4	14: Select Item
L2 Gable 256 kB X 4 Fill General Help L3 Gache 6144 kB Fill General Help Hyper-threading [Enabled] F3: Optimized Defaults Active Processor Cores [All] F4: Save & Exit Linit CPUID Maximum [Disabled] ESC: Exit Execute Disable Bit [Enabled] F3: Optimized Defaults Intel Virtualization Technology [Disabled] F3: Optimized Defaults	L1 Code Cache	32 KB X 4	Enter: Select
La bable 644 Kb F1: belocation Hyper-threading [Enabled] F2: Previous Values Active Processor Cores [All] F4: Save & Exit Limit CPUID Maximum [Disabled] ESC: Exit Execute Disable Bit [Enabled] Intel Virtualization Technology [Disabled] Hardware Prefetcher [Enabled]	L2 Cache	200 KB X 4	F1: Concept Hole
Hyper-threading [Enabled] F3: Optimized Defaults Active Processor Cores [Ail] F4: Save & Exit Limit CPUID Maximum [Disabled] ESC: Exit Execute Disable Bit [Enabled] Intel Virtualization Technology [Disabled] Hardware Prefetcher [Enabled]	L3 Gacile	0144 ND	E2: Previous Values
Active Processor Cores [All] Limit CPUID Maximum [Disabled] Execute Disable Bit [Enabled] Intel Virtualization Technology [Disabled] Hardware Prefetcher [Enabled]	Huner-threading		E3: Ontimized Defaults
Limit CPUID Maximum [Disabled] Execute Disable Bit [Enabled] Intel Virtualization Technology [Disabled] Hardware Prefetcher [Enabled]	Active Processor Cores	[A11]	F4: Save & Exit
Execute Disable Bit [Enabled] Intel Virtualization Technology [Disabled] Hardware Prefetcher [Enabled] •	Limit CPUID Maximum	[Disabled]	ESC: Exit
Intel Virtualization Technology [Disabled] Hardware Prefetcher [Enabled] •	Execute Disable Bit	[Enabled]	
Hardware Prefetcher [Enabled] •	Intel Virtualization Technology	[Disabled]	
	Hardware Prefetcher	[Enabled]	••• ▼
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СОМ-НМ76

Aptio Setup Utility Advanced	– Copyright (C) 2011 Americ	can Megatrends, Inc.
Microcode Patch Max CPU Speed Min CPU Speed CPU Speed Processor Cores Intel HT Technology Intel VT-x Technology Intel SMX Technology 64-bit	10 2300 MHz 1200 MHz 4 Supported Supported Supported Supported	◆ The Maximum instantaneous current allow for Secondary Plane
L1 Data Cache L1 Code Cache L2 Cache L3 Cache Hyper-threading Active Processor Cores Limit CPUID Maximum Execute Disable Bit Intel Virtualization Technology Hardware Prefetcher Adjacent Cache Line Prefetch TCC Activation offset Primary Plane Current value	32 kB x 4 32 kB x 4 256 kB x 4 6144 kB [Enabled] [A1] [Disabled] [Enabled] [Enabled] [Enabled] [Enabled] 0 0	<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>

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Option summary:

Hyper-Threading	Disabled			
	Enabled	Default		
Enabled for Windows XP and Linux (OS optimized for Hyper-Threading Technology)				
and Disabled for other C	S (OS not optimized for	or Hyper-Threading Technology).		
When Disabled only one	thread per enabled co	re is enabled.		
Active Processor Cores	All	Default		
	1			
	2			
	3			
Number of cores to enab	ole in each processor p	ackage.		
Limit CPUID Maximum	Disabled	Default		
	Enabled			
Disabled for Windows X	Ρ			
Execute Disable Bit	Disabled			
	Enabled	Default		
XD can prevent certain of	classes of malicious but	ffer overflow attacks when combined		
with a supporting OS (W	indows Server 2003 SI	P1, Windows XP SP2, SuSE Linux		
9.2, RedHat Enterprise 3	3 Update 3.)			
Intel Virtualization	Disabled	Default		
Technology	Enabled			
When enabled, a VMM can utilize the additional hardware capabilities provided by				
Vanderpool Technology.				
Hardware Prefetcher	Disabled			
	Enabled	Default		
To turn on/off the Mid Le	vel Cache (L2) streame	er prefetcher.		
Adjacent Cache Line	Disabled			
Prefetch	Enabled	Default		
To turn on/off prefetching of adjacent cache lines.				
TCC Activation offset	0~50	Default (0)		
When enabled, a VMM can utilize the additional hardware capabilities provided by				
Vanderpool Technology.				
Primary Plane Current	0~255	Default (0)		
value				
The Maximum instantaneous current allow for Primary Plane				
Secondary Plane	0~255	Default (0)		
Current value				
The Maximum instantaneous current allow for Secondary Plane				
SATA Configuration (IDE)

Aptio Setup Utility Advanced	– Copyright (C) 2011 America	n Megatrends, Inc.
SATA Controller(s) SATA Mode Selection	[Enabled] [IDE]	Enable or disable SATA Device.
Serial ATA Port O Serial ATA Port 1 Serial ATA Port 2 Serial ATA Port 3 Software Preserve	Empty Empty Empty Empty Unknown	
		<pre>++: Select Screen 1J: 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.

SATA Controllers	Disabled	
	Enabled	Default
En/Disable SATA Controller.		
SATA Mode Selection	IDE	Default
	AHCI	
Determines how SATA controller(s) operate.		

SATA Configuration (AHCI)

Aptio Setup U Advanced	tility – Copyright (C) 2011 Am	merican Megatrends, Inc.
SATA Controller(s) SATA Mode Selection	[Enabled] [AHCI]	Determines how SATA controller(s) operate.
Serial ATA Port 0 Hot Plug Serial ATA Port 1 Hot Plug Serial ATA Port 2 Hot Plug Serial ATA Port 3 Software Preserve Port 3 Hot Plug	Empty [Disabled] Empty [Disabled] Empty [Disabled] Empty Unknown [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	.1219. Copyright (C) 2011 Amer	rican Megatrends, Inc.

Hot Plug	Disabled	
-	Enabled	Default
En/Disable Hot Plug	j feature.	
Port 3	Disabled	
	Enabled	Default
En/Disable SATA Po	ort.	

USB Configuration

Aptio Setup Utility - Advanced	Copyright (C) 2011 American	Megatrends, Inc.
USB Configuration		Enables Legacy USB support. AUTO option disables legacy
USB Devices: 1 Drive, 1 Keyboard, 2 Hubs		support if no USB devices are connected. DISABLE option will keep USB devices available
Legacy USB Support		only for EFI applications.
USB3.0 Support	[Enabled]	
Mass Storage Devices:		
InnostorInnostor 1.00	[Auto]	
		↔+: Select Screen
		14: Select Item
		+/-: Change Opt.
		F1: General Help
		F2: Previous Values
		F3: Optimized Defaults
		ESC: Exit
Version 2 14 1219 Co	nuright (C) 2011 American M	legatrends Inc

Legacy USB Support	Enabled	Default
	Disabled	
	Auto	
Enables BIOS Support for Legacy USB Support. When enabled, USB can be		
functional in legacy environn	nent like DOS.	
AUTO option disables legac	y support if no USE	devices are connected
USB3.0 Support	Enabled	Default
	Disabled	
Enable/Disable USB3.0 (XHCI) Controller support.		

On-Module IO Configuration

Aptio Setup Utility Advanced	– Copyright (C) 2011 Americ	an Megatrends, Inc.
On-Module IO Configuration		Set Parameters of Serial Port
On-Module IO Chip ▶ Serial Port 1 Configuration ▶ Serial Port 2 Configuration	ITE IT851×	i (conc)
Restore on Power Loss	[Last State]	
		++: Select Screen 1: 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.

Restore on Power Loss	Always OFF	
	Always ON	
	Last State	Default
Select power state when power is re-applied after a power failure.		

Serial Port Configuration

Aptio Setup Utility - Advanced	- Copyright (C) 2011 Americar) Megatrends, Inc.
Serial Port 1 Configuration		Enable or Disable Serial Port
Serial Port Device Settings	[Enabled] IO=3E8h; IRQ=10;	
Change Settings	[Auto]	
		++: Select Screen 14: Select Item
		Enter: Select +∕−: Change Opt.
		F1: General Help F2: Previous Values F3: Ontimized Defaults
		F4: Save & Exit ESC: Exit
Varaian 0.44.4940	Conunistat (C) 2044 American I	logatoporda. The
VELSIUN 2.14.1215. U	sopyright (67 2011 AMERICAN r	ieguti chus, inc.

Serial Port	Disabled	
	Enabled	Default
Allows BIOS to En/Disab	le correspond serial port.	
Change Settings	Auto	Default
	IO=3F8h; IRQ=3;	
	IO=3F8h; IRQ=	
	3,4,5,6,7,10,11;	
	IO=2F8h; IRQ=	
	3,4,5,6,7,10,11;	
	IO=3E8h; IRQ=	
	3,4,5,6,7,10,11;	
	IO=2E8h; IRQ=	
	3,4,5,6,7,10,11;	
Allows BIOS to Select Se	erial Port resource.	

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Aptio Setup Utility – Advanced	Copyright (C) 2011 American	Megatrends, Inc.
Serial Port 2 Configuration		Enable or Disable Serial Port
Serial Port Device Settings	[Enabled] IO=2E8h; IRQ=11;	(COM)
Change Settings	[Auto]	
		++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F3: Optimized Defaults
		F4: Save & EXIT ESC: EXIT
Version 2 14 1219 Co	nuright (C) 2011 American M	egatrends Inc

Serial Port	Disabled	
	Enabled	Default
Allows BIOS to En/Disab	le correspond serial port.	
Change Settings	Auto	Default
	IO=2F8h; IRQ=4;	
	IO=3F8h; IRQ=	
	3,4,5,6,7,10,11;	
	IO=2F8h; IRQ=	
	3,4,5,6,7,10,11;	
	IO=3E8h; IRQ=	
	3,4,5,6,7,10,11;	
	IO=2E8h; IRQ=	
	3,4,5,6,7,10,11;	

On-Module H/W Monitor

Aptio Setup U Advanced	Hility – Copyright (C) 2011 A	American Megatrends, Inc.
Pc Health Status		Smart Fan Configuration
CPU Temperature SYS Temperature	: +47 °c : +32 °c	
CPU FAN Speed	: 3317 RPM	
VAC_IN VSA2 V3.3S V1.5 V5A VCORE ► Smart Fan Mode Configuratio	: +12.090 V : +5.174 V : +3.296 V : +1.368 V : +5.164 V : +0.924 V	<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 Ame	erican Megatrends, Inc.

Smart Fan Mode Configuration

Aptio Setup Utility - Advanced	Copyright (C) 2011 American	Megatrends, Inc.
Aptio Setup Utility - Advanced CPU Smart Fan control Manual Setting	Copyright (C) 2011 American (Manual Mode by PWM) 70	<pre>#egatrends, Inc. #+: Select Screen 1+: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values</pre>
		F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.14.1219. Co	pyright (C) 2011 American M	egatrends, Inc.

CPU Smart Fan Control	Full Mode	
	Manual Mode by PWM	Default
	Auto Mode by PWM	
Select CPU Fan control mode		
Manual Setting	70 (0 - 100)	Default
Set Fan at fixed Duty-Cycle Min=0 Max=100 Please input Dec number		

Dynamic Digital IO

Aptio Setup Utility - Advanced	- Copyright (C) 2011 American	Megatrends, Inc.
Dynamic Digital IO		Enable or Disable Dynamic
Dynamic Digital IO Support ▶ Dynamic Digital IO Configuration		
		+: Select Screen 1↓: 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 M	

Dynamic Digital IO	Disabled	Default
Support	Enabled	
En/Disable Dynamic Digital IO Support.		

Dynamic Digital IO Configuration

Aptio Setup Utility - Advanced	Copyright (C) 2011 American	Megatrends, Inc.
GPI0 Direction GPI1 Direction GPI2 Direction GPI3 Direction GP00 Direction Output Level GP01 Direction Output Level GP02 Direction Output Level GP03 Direction Dutput Level	<pre>[Input] [Input] [Input] [Input] [Output] [Hi] [Output] [Hi] [Output] [Hi] [Output] [Hi]</pre>	<pre>Set GPI0 as Input or Output ++: Select Screen t↓: 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. C	opyright (C) 2011 American M	egatrends, Inc.

GPI0~3 Direction	Input	Default
	Output	
Set GPIO as Input or Output.		
GPO0~3 Direction	Input	
	Output	Default
Set GPIO as Input or Output.		
Output Level	Low	
	Hi	Default
Allows BIOS to select high/low voltage level to output to corresponding DIO ping.		

Setup submenu: Chipset

Aptio Setup Utility – Copyright (C) 2 Main Advanced <mark>Chipset</mark> Boot Security Save & Ex	011 American Megatrends, Inc. it
▶ PCH-IO Configuration ▶ System Agent (SA) Configuration	PCH 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 2.14.1219. Copyright (C) 201	1 American Megatrends, Inc.

PCH-IO Configuration

Aptio Setup Utility - Chipset	Copyright (C) 2011 Americar	n Megatrends, Inc.
PCH-IO Configuration		Select power supply mode.
Power Mode		
Azalia Azalia Internal HOMI Codec Azalia HOMI codec Port B Azalia HOMI codec Port C Azalia HOMI codec Port D PCH LAN Controller Make on LAN	[Enabled] [Enabled] [Disabled] [Enabled] [Disabled] [Enabled] [Enabled]	
▶ PCI Express Configuration		<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. C	opyright (C) 2011 American ⊧	Megatrends, Inc.

Option summary:

Power Mode	АТХ Туре	Default	
	АТ Туре		
Select power supply mode			
Azalia	Disabled		
	Enabled	Default	
Control Detection of the Azal	ia device.		
Disabled = Azalia will be unc	onditionally disabled.		
Enabled = Azalia will be unco	onditionally Enabled.		
Auto = Azalia will be enabled	l if present, disabled o	other wise.	
Azalia Internal HDMI Codec	Disabled		
	Enabled	Default	
Enable or disable internal HDMI codec for Azalia.			
Azalia HDMI codec Port B	Disabled	Default	
	Enabled		
Enable or disable internal HDMI codec Port for Azalia.			
Azalia HDMI codec Port C	Disabled		
	Enabled	Default	
Enable or disable internal HDMI codec Port for Azalia.			

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Azalia HDMI codec Port D	Disabled	Default
	Enabled	
Enable or disable internal H	DMI codec Port for Az	alia.
PCH LAN Controller	Disabled	
	Enabled	Default
Enable or disable onboard N	IIC.	
Wake on LAN	Disabled	
	Enabled	Default
Enable or disable integrated	LAN to wake the syst	em. (The Wake On LAN cannot be
disabled if ME is on at Sx sta	ate)	

PCI Express Configuration

Aptio Setup Utilit Chipset	y – Copyright (C) 2011 A	merican Megatrends, Inc.
PCI Express Configuration		Control the PCI Express Root
POI Express Root Port 1 POIe Speed POI Express Root Port 2 POIe Speed POI Express Root Port 3 POIe Speed POI Express Root Port 4 POIE Speed POI Express Root Port 5 POIE Speed POI Express Root Port 6	[Enabled] [Auto] [Enabled] [Auto] [Enabled] [Auto] [Auto] [Enabled] [Auto] [Fnabled] [Fnabled]	
PCIE Speed PCI Express Root Port 7 PCIE Speed PCIE Port 8 is assigned to LAN	[Auto] [Enabled] [Auto]	<pre>++: Select Screen 11: 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 Ame	rican Megatrends, Inc.

PCI Express Root Port	Enabled	Default
(1 - 7)	Disabled	
Control the PCI Express Roo	ot Port.	
PCI Speed	Auto	Default
	Gen1	
	Gen2	
Select PCI Express port speed.		

System Agent (SA) Configuration

Aptio Setup Uti Chipset	lity – Copyright (C) 2011 Am	erican Megatrends, Inc.
VT-d Capability Memory Frequency Total Memory DIMM#0 DIMM#2	Supported 1600 Mhz 8192 MB (DDR3) 8192 MB (DDR3) Not Present	Configure PEG0 B0:D1:F0 Gen1-Gen3
PEGO – Gen Speed		
VT-d	[Enabled]	
▶ Graphics Configuration		++: 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 Amer.	ican Megatrends, Inc.

PEGO – Gen Speed	Auto	Default
	Gen1	
	Gen2	
	Gen3	
Configure PEG0 B0:D1:F0 G	Gen1-Gen3	
VT-d	Enabled	Default
	Disabled	
Check to enable VT-D function on MCH		

Graphics Configuration

Aptio Setup Chipset	Utility – Copyright (C) 2011 #	American Megatrends, Inc.
Graphics Configuration		Select which of IGFX/PEG/PCI Graphics device should be
Primary Display Internal Graphics	[Auto] [Auto]	Primary Display Or select SG for Switchable Gfx.
DVMT Pre-Allocated DVMT Total Gfx Mem	[64M] [MAX]	
▶ Display Control		
		<pre>++: Select Screen 1↓: Select Item</pre>
		Enter: Select +/-: Change Opt.
		F1: General Help F2: Previous Values
		F3: Uptimized Defaults F4: Save & Exit
		ESC. EXIL
Version 2.1	.4.1219. Copyright (C) 2011 Ame	erican Megatrends, Inc.

Option summary:

Primary Display	Auto	Default
	IGFX	
	PEG	
	PCI	
Select which of IGFX/PEG	/PCI Graphics device sh	ould be Primary Display Or select
SG for Switchable Gfx.		
Internal Graphics	Auto	Default
	Disabled	
	Enabled	
Keep IGD enabled based of	on the setup Option.	
DVMT Pre-Allocated	32M	
	64M	Default
	96M	
	128M	
	160M	
	192M	
	224M	
	256M	

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	288M	
	320M	
	352M	
	284M	
	416M	
	448M	
	480M	
	512M	
	1024M	
Select DVMT 5.0 Pre-Allo	cated (Fixed) Graphics M	lemory size used by the Internal
Graphics Device.		
DVMT Total Gfx Mem	128M	
	256M	
	MAX	Default

Select DVMT5.0 Total Graphic Memory size used by the Internal Graphics Device.

Display Control

Aptio Setup Utili Chipset	ty – Copyright (C) 2011 Americ	an Megatrends, Inc.
Display Control Boot Display Select LCD Panel Type Panel Color Depth	[V8IOS Default] [1024x768,18bit,60Hz] [18 Bit]	Select the Video Device during POST and DOS. This has no effect if external graphics present.
▶ Advanced Display Control		<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 2.14.121	9. Copyright (C) 2011 American	Megatrends, Inc.

Boot Display Select	VBIOS Default	Default
Boot Display Beleet	CRT	Delaun
	HDMI	
	CRT+LVDS	
Select the Video Device w	hich will be activated during Po	OST and DOS. This has no
effect if external graphics p	present.	
LCD Panel Type	640x480, 18bit, 60Hz	
	800x480, 18bit, 60Hz	
	800x600, 18bit, 60Hz	
	1024x600, 18bit, 60Hz	
	1024x768, 18bit, 60Hz	Default
	1024x768, 24bit, 60Hz	
	1280x768, 24bit, 60Hz	
	1280x1024, 48bit, 60Hz	
	1366x768, 24bit, 60Hz	
	1440x900, 48bit, 60Hz	
	1600x1200, 48bit, 60Hz	
	1920x1080, 48bit, 60Hz	
	1920x1200, 48bit, 60Hz	
Select LCD panel used by	internal Graphics Device by se	electing the appropriate
setup item.		
Panel Color Depth	18 Bit	Default
	24Bit	
Select the LFP Panel Colo	r depth	

Advanced Display Control

Aptio Setup Utili Chipset	ty – Copyright (C) 2011 Americ	an Megatrends, Inc.
Advanced Display Control Boot Display Select Primary IGFX Boot Display Active LFP LCD Panel Type Panel Color Depth Backlight Control LVDS1 Backlight Level	[UEFI boot] [VBIOS Default] [Int-LVOS] [1024x768,18bit,60Hz] [18 Bit] [FWM Normal] [80%]	Select the Video Device during POST and DOS. This has no effect if external graphics present. UEFI – For UEFI style boot EFP – DVI/HDMI/DP EFP2 – eDP LFP – LVDS
		++: Select Screen 1: 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	Megatrends, Inc.

Boot Display Select	UEFI boot	Default
	CRT	
	EFP	
	LFP	
	CRT2	
	EFP3	
	EFP2	
	CRT + I FP	
Select the Video Device w	hich will be activated du	ring POST and DOS. This has no
effect if external graphics r	present.	
UFFI – For UFFI style boo	t	
EFP – DVI/HDMI/DP	-	
EFP2 – eDP		
LFP - LVDS		
Primary IGFX Boot	VBIOS Default	Default
Display	CRT	
-1 - 5	FFP	
	L FP	
	CRT2	
	EEP3	
	EFP2	
Select the Video Device w	hich will be activated du	ring POST and DOS. This has no
effect if external graphics r	present	ing root and boo. This has no
Secondary boot disaply se	lection will appear base	d on your selection
VGA modes will be suppor	ted only on primary disa	nly
Active LEP	No I VDS	51 5 .
	Int-I VDS	Default
	SDVOLVDS	Deldan
	ADP Port-D	
Select the Active LEP Con	figuration	
No LVDS: VBIOS does not	t enable LVDS	
Int-I VDS: VBIOS enables	I VDS driver by Integrate	ad encoder
SDVO LVDS: VBIOS		
	640x480 18bit 60Hz	
LOD I allel Type	800x480 18bit 60Hz	
	800x600 18bit 60Hz	
	1024v600 18bit 6047	
	1024X000, 10011, 00HZ	Default
	1024X/00, 10011, 0002	Delault
	1024X/00, 24011, 60HZ	
	120UX/00, 24DIT, 60HZ	
	1280x1024, 48bit,	
	bUHZ	
	1366x768, 24bit, 60Hz	
	1440x900, 48bit, 60Hz	

	1600x1200, 48bit,	
	60Hz	
	1920x1080, 48bit,	
	60Hz	
	1920x1200, 48bit,	
	60Hz	
Select LCD panel used by setup item.	internal Graphics Devic	e by selecting the appropriate
Panel Color Depth	18 Bit	Default
	24Bit	
Select the LFP Panel Colo	r depth	
Backlight Control	PWM Inverted	
-	PWM Normal	Default
Back Light Control Setting		
LVDS1 Backlight Level	100%	
	90%	
	80%	Default
	70%	
	60%	
	50%	
	40%	
	30%	
	20%	
	10%	
	0%	
Select Backlight brightness	s of LVDS	

Setup submenu: Boot

Aptio Setup (Main Advanced Chipset <mark>B</mark>	Jtility – Copyright (C) 2011 Americar Soot Security Save & Exit	Megatrends, Inc.
Boot Configuration Quiet Boot Launch I82579LM PXE OpROM	[Enabled] [Disabled]	Enables or disables Quiet Boot option
Boot Option Priorities Boot Option #1 Boot Option #2	[UEFI: InnostorInno] [InnostorInnostor 1.00]	
Hard Drive BBS Priorities		
		++: Select Screen
		↑↓: Select Item Enter: Select +/-: Change Opt.
		F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit F50: Fxit
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Quiet Boot	Disabled		
	Enabled	Default	
Enables or Disables showing boot logo.			
Launch I82579LM PXE	Disabled	Default	
OpROM	Enabled		
En/Disable Legacy boot Option for I82579LM.			

BBS Priorities

Aptio Setup Utility Boot	– Copyright (C) 2011 Americar	n 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) 2011 American M	Megatrends, Inc.

Security

Aptio Setup Utility – Copyright (C) 2011 American Megatrends, Inc. Main Advanced Chipset Boot <mark>Security</mark> Save & Exit			
Password Description		Set Administrator Password	
If ONLY the Administrator's p then this only limits access only asked for when entering If ONLY the User's password aid is a power on password and mu boot or enter Setup. In Setup have Administrator rights. The password length must be in the following range: Minimum length	assword is set, to Setup and is Setup. s set, then this is the entered to the User will		
Administrator Password User Password	20	<pre>++: Select Screen fl: Select Item Enter: Select +/-: Change Opt.</pre>	
		F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit	
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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.

Setup submenu: Exit

Aptio Setup Utility – Copyright (C) 2011 American Main Advanced Chipset Boot Security Save & Exit	Megatrends, Inc.
Save Dhanges and Reset Discard Changes and Reset Restore Defaults Save as User Defaults Restore User Defaults	Reset the system after saving the changes.
	++: Select Screen tl: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
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Chapter

Driver Installation

Chapter 4 Driver Installation 4-1

The COM-HM76 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 Chipset Driver Step 2 – Install VGA Driver Step 3 – Install LAN Driver Step 4 – Install Audio Driver Step 5 – Install USB3.0 Driver Step 6 – Install RAID & AHCI Driver Step 7 – Install ME Driver

Please read instructions below for further detailed installations.

4.1 Installation:

Insert the COM-HM76 DVD-ROM into the DVD-ROM drive. And install the drivers from Step 1 to Step 7 in order.

Step 1 – Install Chipset Driver

- 1. Click on the *Step 1 Chipset* folder and double click on the *Setup.exe* file
- 2. Follow the instructions that the window shows
- 3. The system will help you install the driver automatically
- Step 2 Install VGA Driver
 - 1. Click on the **Step 2 Graphics** 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 3 –Install LAN Driver
 - Click on the Step 3 LAN folder and select the OS folder your system is and double click on the .exe file located in each OS folder
 - 2. Follow the instructions that the window shows
 - 3. The system will help you install the driver automatically

Step 4 –Install Audio Driver

- 1. Click on the **Step 4 Audio** folder and select the **Win7_Win8** folder
- 2. Double click on the **Setup.exe** file
- 3. Follow the instructions that the window shows
- 4. The system will help you install the driver automatically

Step 5 – Install USB3.0 Driver

- 1. Click on the *Step 5 USB3.0* folder and double click on the *Setup.exe* file
- 2. Follow the instructions that the window shows
- 3. The system will help you install the driver automatically

Step 6 – Install RAID & AHCI Driver

Please refer to the Appendix C AHCI Setting

Step 7 – Install ME Driver

- 1. Click on the **Step 7 ME** folder and double click on the **Setup.exe** file
- 2. Follow the instructions that the window shows
- 3. The system will help you install the driver automatically

Appendix A

Programming the Watchdog Timer

Appendix A Programming the Watchdog Timer A-1

A.1 Watchdog Timer Initial Program

Table 1 : Embedded BRAM relative register table			
	Default Value Note		
Index	0x284 (Note1)	BRAM Index Register	
Data	0x285(Note2)	BRAM Data Register	
Logical Device Number	0xA8 (Note3)	Watch dog Logical Device Number	
Function and Device Number 0x00(Note4) Watch dog Function/Device Num		Watch dog Function/Device Number	

Table 2 : Watchdog relative register table					
	Option	BitNum	Value	Note	
	Register				
Timer Counter				Time of watchdog	
	0x00 (Note5)		(Note10)	timer	
				(0~255)	
Counting Unit	0x01 (Note6)	0 (Note7)	0 (Note11)	Select time unit.	
				0: second	
				1: minute	
Watchdog RST pulse width	0x01 (Note8)	[3:2] (Note9)	0 (Note12)	0: 20ms	
				1: 60ms	
				2: 100ms	
				3: 250ms	

// Embedded BRAM relative definition (Please reference to Table 1) #define byte EcBRAMIndex //This parameter is represented from Note1 #define byte EcBRAMData //This parameter is represented from Note2 #define byte BRAMLDNReg //This parameter is represented from Note3 #define byte BRAMFnDataReg //This parameter is represented from Note4 #define void EcBRAMWriteByte(byte Offset, byte Value); #define byte EcBRAMReadByte(byte Offset); #define void IOWriteByte(byte Offset, byte Value); #define byte IOReadByte(byte Offset); // Watch Dog relative definition (Please reference to Table 2) #define byte TimerReg //This parameter is represented from Note5 #define byte TimerVal // This parameter is represented from Note10 #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 Note11 #define byte RSTReg //This parameter is represented from Note8 #define byte RSTBit //This parameter is represented from Note9 #define byte RSTVal //This parameter is represented from Note12

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();

}

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// Procedure : AaeonWDTEnable

VOID AaeonWDTEnable (){ WDTEnableDisable(1);

}

// Procedure : AaeonWDTConfig

VOID AaeonWDTConfig (){

// Disable WDT counting
WDTEnableDisable(0);
// WDT relative parameter setting
WDTParameterSetting();

}

VOID WDTEnableDisable(byte Value){

ECBRAMWriteByte(TimerReg , Value);

}

}

VOID WDTParameterSetting(){ Byte TempByte;

> // Watchdog Timer counter setting ECBRAMWriteByte(TimerReg , TimerVal); // WDT counting unit setting TempByte = ECBRAMReadByte(UnitReg); TempByte | = (UnitVal << UnitBit); ECBRAMWriteByte(UnitReg , TempByte); // WDT RST pulse width setting TempByte = ECBRAMReadByte(RSTReg); TempByte | = (RSTVal << RSTBit); ECBRAMWriteByte(RSTReg , TempByte);


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Appendix B

I/O Information

B.1 I/O Address Map

Input/output (IO)
[0000008C - 0000008E] Motherboard resources
[00000093 - 0000009F] Direct memory access controller
[000000A0 - 000000A1] Programmable interrupt controller
[000000A2 - 000000BF] Motherboard resources
[000000A4 - 000000A5] Programmable interrupt controller
[000000A8 - 000000A9] Programmable interrupt controller
[000000AC - 000000AD] Programmable interrupt controller
[000000BC - 000000BD] Programmable interrupt controller

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[000000E0 - 000000EF] Motherboard resources
[000000F0 - 000000FF] Numeric data processor
[00000200 - 0000020F] Motherboard resources
1000002E8 - 000002EF] Communications Port (COM10)
[000003C0 - 000003DF] Intel(R) HD Graphics 4000
[000003E8 - 000003EF] Communications Port (COM9)
[00000400 - 00000453] Motherboard resources
[00000454 - 00000457] Motherboard resources
[00000458 - 0000047F] Motherboard resources
[000004D0 - 000004D1] Motherboard resources
[000004D0 - 000004D1] Programmable interrupt controller
1 [00000500 - 0000057F] Motherboard resources
[00000680 - 0000069F] Motherboard resources
[0000164E - 0000164F] Motherboard resources
[0000F040 - 0000F05F] Intel(R) 7 Series/C216 Chipset Family SMBus Host Controller - 1E22
[0000F080 - 0000F08F] Intel(R) 7 Series/C216 Chipset Family 2 port Serial ATA Storage Controller - 1E09
[0000F090 - 0000F09F] Intel(R) 7 Series/C216 Chipset Family 2 port Serial ATA Storage Controller - 1E09
[0000F0A0 - 0000F0A3] Intel(R) 7 Series/C216 Chipset Family 2 port Serial ATA Storage Controller - 1E09
[0000F0B0 - 0000F0B7] Intel(R) 7 Series/C216 Chipset Family 2 port Serial ATA Storage Controller - 1E09
[0000F0C0 - 0000F0C3] Intel(R) 7 Series/C216 Chipset Family 2 port Serial ATA Storage Controller - 1E09
[0000F0D0 - 0000F0D7] Intel(R) 7 Series/C216 Chipset Family 2 port Serial ATA Storage Controller - 1E09
[0000F0E0 - 0000F0EF] Intel(R) 7 Series/C216 Chipset Family 4 port Serial ATA Storage Controller - 1E01
[0000F0F0 - 0000F0FF] Intel(R) 7 Series/C216 Chipset Family 4 port Serial ATA Storage Controller - 1E01
[0000F100 - 0000F103] Intel(R) 7 Series/C216 Chipset Family 4 port Serial ATA Storage Controller - 1E01
[0000F110 - 0000F117] Intel(R) 7 Series/C216 Chipset Family 4 port Serial ATA Storage Controller - 1E01
[0000F120 - 0000F123] Intel(R) 7 Series/C216 Chipset Family 4 port Serial ATA Storage Controller - 1E01
[0000F130 - 0000F137] Intel(R) 7 Series/C216 Chipset Family 4 port Serial ATA Storage Controller - 1E01
[0000FFFF - 0000FFFF] Motherboard resources
■ I0000FFFF - 0000FFFF1 Motherboard resources

B.2 Memory Address Map

	[000A0000 - 000BFFFF] Intel(R) HD Graphics 4000
	[000A0000 - 000BFFFF] PCI bus
	[000D0000 - 000D3FFF] PCI bus
	[000D4000 - 000D7FFF] PCI bus
	[000D8000 - 000DBFFF] PCI bus
	[000DC000 - 000DFFFF] PCI bus
	[000E0000 - 000E3FFF] PCI bus
	[000E4000 - 000E7FFF] PCI bus
	[20000000 - 201FFFFF] System board
	[40004000 - 40004FFF] System board
1	[DFA00000 - DFA00FFF] Motherboard resources
	[DFA00000 - FEAFFFFF] PCI bus
	[E0000000 - EFFFFFFF] Intel(R) HD Graphics 4000
	[F7800000 - F7BFFFFF] Intel(R) HD Graphics 4000
- 💇	[F7C00000 - F7C1FFFF] Intel(R) 82579LM Gigabit Network Connection
🟺	[F7C20000 - F7C2FFFF] Intel(R) USB 3.0 eXtensible Host Controller
	[F7C30000 - F7C33FFF] High Definition Audio Controller
	[F7C35000 - F7C350FF] Intel(R) 7 Series/C216 Chipset Family SMBus Host Controller - 1E22
	[F7C36000 - F7C363FF] Intel(R) 7 Series/C216 Chipset Family USB Enhanced Host Controller - 1E26
🟺	[F7C37000 - F7C373FF] Intel(R) 7 Series/C216 Chipset Family USB Enhanced Host Controller - 1E2D
- P	[F7C38000 - F7C38FFF] Intel(R) 82579LM Gigabit Network Connection
-12	[F7C3A000 - F7C3A00F] Intel(R) Management Engine Interface
	[F8000000 - FBFFFFFF] Motherboard resources
	[FED00000 - FED003FF] High precision event timer
	[FED10000 - FED17FFF] Motherboard resources
···· [🖳	[FED18000 - FED18FFF] Motherboard resources
[!	[FED19000 - FED19FFF] Motherboard resources
···· [[FED1C000 - FED1FFFF] Motherboard resources
I 💆	[FED20000 - FED3FFFF] Motherboard resources
	[FED40000 - FED44FFF] System board
···· 1	[FED45000 - FED8FFFF] Motherboard resources
1	[FED90000 - FED93FFF] Motherboard resources
	[FEE00000 - FEEFFFFF] Motherboard resources
-1	[FF000000 - FFFFFFFF] Intel(R) 82802 Firmware Hub Device
	[FF000000 - FFFFFFFF] Motherboard resources

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B.3 IRQ Mapping Chart

✓ Interrupt request (IRQ)	
(ISA) 0x00000000 (00)	System timer
(ISA) 0x00000008 (08)	System CMOS/real time clock
(ISA) 0x0000000A (10)	Communications Port (COM9)
(ISA) 0x0000000B (11)	Communications Port (COM10)
(ISA) 0x0000000D (13)	Numeric data processor
(ISA) 0x00000051 (81)	Microsoft ACPI-Compliant System
(ISA) 0x00000052 (82)	Microsoft ACPI-Compliant System
(ISA) 0x00000053 (83)	Microsoft ACPI-Compliant System
(ISA) 0x00000054 (84)	Microsoft ACPI-Compliant System
(ISA) 0x00000055 (85)	Microsoft ACPI-Compliant System
(ISA) 0x00000056 (86)	Microsoft ACPI-Compliant System
(ISA) 0x00000057 (87)	Microsoft ACPI-Compliant System
(ISA) 0x00000058 (88)	Microsoft ACPI-Compliant System
(ISA) 0x00000059 (89)	Microsoft ACPI-Compliant System
(ISA) 0x0000005A (90)	Microsoft ACPI-Compliant System
(ISA) 0x0000005B (91)	Microsoft ACPI-Compliant System
(ISA) 0x0000005C (92)	Microsoft ACPI-Compliant System
(ISA) 0x0000005D (93)	Microsoft ACPI-Compliant System
(ISA) 0x0000005E (94)	Microsoft ACPI-Compliant System
(ISA) 0x0000005F (95)	Microsoft ACPI-Compliant System
(ISA) 0x00000060 (96)	Microsoft ACPI-Compliant System
(ISA) 0x00000061 (97)	Microsoft ACPI-Compliant System
(ISA) 0x00000062 (98)	Microsoft ACPI-Compliant System
(ISA) 0x0000063 (99)	Microsoft ACPI-Compliant System
(ISA) 0x00000064 (100)	Microsoft ACPI-Compliant System
(ISA) 0x00000065 (101)	Microsoft ACPI-Compliant System
(ISA) 0x00000066 (102)	Microsoft ACPI-Compliant System
(ISA) 0x00000067 (103)	Microsoft ACPI-Compliant System
(ISA) 0x00000068 (104)	Microsoft ACPI-Compliant System
(ISA) 0x0000069 (105)	Microsoft ACPI-Compliant System
(ISA) 0x000006A (106)	Microsoft ACPI-Compliant System
(ISA) 0x000006B (107)	Microsoft ACPI-Compliant System
(ISA) 0x000006C (108)	Microsoft ACPI-Compliant System
(ISA) 0x000006D (109)	Microsoft ACPI-Compliant System
	Microsoft ACPI-Compliant System
19 (ISA) 0x00000077 (119)	Microsoft ACPI-Compliant System
15A) 0x00000078 (120)	Microsoft ACPI-Compliant System
	Microsoft ACPI-Compliant System

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	Microsoft ACPI-Compliant System
	Microsoft ACPI-Compliant System
(ISA) 0x00000089 (137)	Microsoft ACPI-Compliant System
📲 (ISA) 0x000008A (138)	Microsoft ACPI-Compliant System
	Microsoft ACPI-Compliant System
	Microsoft ACPI-Compliant System
19 (ISA) 0x000008D (141)	Microsoft ACPI-Compliant System
19 (ISA) 0x000008E (142)	Microsoft ACPI-Compliant System
	Microsoft ACPI-Compliant System
	Microsoft ACPI-Compliant System
19 (ISA) 0x00000091 (145)	Microsoft ACPI-Compliant System
ISA) 0x00000092 (146)	Microsoft ACPI-Compliant System
	Microsoft ACPI-Compliant System
ISA) 0x00000099 (153)	Microsoft ACPI-Compliant System
(ISA) 0x0000009A (154)	Microsoft ACPI-Compliant System
ISA) 0x0000009B (155)	Microsoft ACPI-Compliant System
	Microsoft ACPI-Compliant System
	Microsoft ACPI-Compliant System
(ISA) 0x000009E (158)	Microsoft ACPI-Compliant System
	Microsoft ACPI-Compliant System
1 (ISA) 0x000000A0 (160)	Microsoft ACPI-Compliant System
(ISA) 0x00000A1 (161)	Microsoft ACPI-Compliant System
(ISA) 0x000000A2 (162)	Microsoft ACPI-Compliant System
(ISA) 0x000000A3 (163)	Microsoft ACPI-Compliant System
1 (ISA) 0x000000A4 (164)	Microsoft ACPI-Compliant System
(ISA) 0x000000A5 (165)	Microsoft ACPI-Compliant System
(ISA) 0x000000A6 (166)	Microsoft ACPI-Compliant System
(ISA) 0x000000A7 (167)	Microsoft ACPI-Compliant System
(ISA) 0x000000A8 (168)	Microsoft ACPI-Compliant System
(ISA) 0x000000A9 (169)	Microsoft ACPI-Compliant System
(ISA) 0x000000AA (170	Nicrosoft ACPI-Compliant System
(ISA) 0X000000AB (171)	Microsoft ACPI-Compliant System
(ISA) 0X000000AC (172)	Microsoft ACPI-Compliant System
(ISA) 0X000000AD (173)	Microsoft ACPI-Compliant System
(ISA) 0X00000AE (I74)	Microsoft ACPI-Compliant System
(ISA) 0X000000AF (I75)	Microsoft ACPI-Compliant System
(ISA) 0X0000000 (170)	Microsoft ACPI-Compliant System
	wicrosoft ACPI-Compliant System

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	(ISA) 0x000000B2 (178)	Microsoft ACPI-Compliant System
	(ISA) 0x000000B3 (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) 0x000000B7 (183)	Microsoft ACPI-Compliant System
-19	(ISA) 0x000000B8 (184)	Microsoft ACPI-Compliant System
-19	(ISA) 0x000000B9 (185)	Microsoft ACPI-Compliant System
	(ISA) 0x000000BA (186)	Microsoft ACPI-Compliant System
, N	(ISA) 0x000000BB (187)	Microsoft ACPI-Compliant System
	(ISA) 0x00000BC (188)	Microsoft ACPI-Compliant System
	(ISA) 0x000000BD (189)	Microsoft ACPI-Compliant System
	(ISA) 0x000000BE (190)	Microsoft ACPI-Compliant System
(N	(PCI) 0x00000005 (05)	Intel(R) 7 Series/C216 Chipset Family SMBus Host Controller - 1E22
	(PCI) 0x00000010 (16)	Intel(R) 7 Series/C216 Chipset Family USB Enhanced Host Controller - 1E2D
- 🖳	(PCI) 0x00000010 (16)	Xeon(R) processor E3-1200 v2/3rd Gen Core processor PCI Express Root Port - 0151
	(PCI) 0x00000013 (19)	Intel(R) 7 Series/C216 Chipset Family 4 port Serial ATA Storage Controller - 1E01
	(PCI) 0x00000013 (19)	Intel(R) 7 Series/C216 Chipset Family 2 port Serial ATA Storage Controller - 1E09
-19	(PCI) 0x00000013 (19)	Xeon(R) processor E3-1200 v2/3rd Gen Core processor PCI Express Root Port - 015D
1	(PCI) 0x00000016 (22)	High Definition Audio Controller
U	(PCI) 0x00000017 (23)	Intel(R) 7 Series/C216 Chipset Family USB Enhanced Host Controller - 1E26
	(PCI) 0xFFFFFFB (-5)	Intel(R) 82579LM Gigabit Network Connection
	(PCI) 0xFFFFFFC (-4)	Intel(R) Management Engine Interface
🖗	(PCI) 0xFFFFFFD (-3)	Intel(R) USB 3.0 eXtensible Host Controller
	(PCI) 0xFFFFFFE (-2)	Intel(R) HD Graphics 4000

B.4 DMA Channel Assignments

Direct memory access (DMA)

4 Direct memory access controller

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AHCI Setting

Appendix C RAID & AHCI Settings C-1

COM-HM76

C.1 Setting AHCI

OS installation to setup AHCI Mode

Step 1: Copy the files below from "*Driver CD ->Step 6 - RAID&AHCI*" to Disk







Step 2: Connect the USB Floppy (disk with AHCI files) to the board



Step 3: The setting procedures " In BIOS Setup Menu" A: Advanced -> SATA Configuration -> SATA Configuration -> SATA Mode -> AHCI Mode

Aptic Setup Utility - Advanced	Copyright (C) 2009 American
SATA Configuration	
SATA Port1 SATA Port2 SATA Port3	FUJITSU MH2208 (80.0GB) ST9120823AS (120.0GB) Not Present
SATA Mode	[AHCI Mode]
Supports Staggered Spin-up Port 1 Hot Plug Port 2 Hot Plug Port 3 Hot Plug	[Disable] [Disable] [Disable] [Disable]
External SATA Port 1 External SATA Port 2 External SATA Port 3	(Disable) [Disable] [Disable]

Step 4: The setting procedures "In BIOS Setup Menu" B: Boot -> Boot Option #1 -> DVD-ROM Type

Aptio Setup Utilit	y – Copyright (C) 2009 American Divers Exit
Boot Configuration Quiet Boot Setup Prompt Timeout	[Disabled] 1
Bootup NumLock State	[0n]
CSM16 Module Verison	07.60
GateA20 Active Option ROM Messages	[Upon Request] [Force BIOS]
Boot Option Priorities	
Boot Option #1	[SATA: PIUNEER DV]
Dept Option #2	THEFT. FOT File 9 1
Boot Option #4	[SATA: FUJITSU MH]

Appendix C RAID & AHCI Settings C-3

Step 5: The setting procedures "In BIOS Setup Menu" C: Save & Exit -> Save Changes and Exit

Aptio Setup	Copyright	(C) 2009	American
	Sav	e & Exit	
Save Changes and Exit			
Discard Changes and Exit			
Save Changes and Reset			
Discard Changes and Reset			
Save Options			
Save Changes			
Discard Changes			
Restore Defaults			
Save as User Defaults			
Postore User Defaults			
Restore user berdarte			
ant guarride			
Boot over the Custem			

Step 6: Setup OS



Appendix C RAID & AHCI Settings C-4

Step 7: Press "F6"



Step 8: Choose "S"



Step 9: Choose "Intel(R) 7 Series Chipset Family SATA AHCI Controller"

You have chosen to configure a SCSI Adapter for use with Windows, using a device support disk provided by an adapter manufacturer.
Select the SCSI Adapter you want from the following list, or press ESC to return to the previous screen.
Intel(R) Desktop/Workstation/Server Express Chipset SATA AHCI Controller Intel(R) Mobile Express Chipset SATA AHCI Controller Intel(R) 7 Series/C216 Chipset Family SATA AHCI Controller
ENTER-Select F3=Exit

Step 10: It will show the model number you select and then press "ENTER"

Hindows Setup
Setup will load support for the following mass storage device(s):
Intel(R) 7 Series Chipset Family SATA AHCI Controller
* To specify additional SCSI adapters, CD-ROM drives, or special disk controllers for use with Hindows, 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.
9-0
3-Specify Haditional Device ENTER=Continue F3=Exit

Appendix C RAID & AHCI Settings C-6

Step 11: Setup is loading files

