

User Manual Version 1.0

# MB-62020 Ultra Low Power Fanless Intel<sup>®</sup> Atom<sup>™</sup> based COM Express Module



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# Chapter 1. General Information

# **1.1 Introduction**

As a member of the Intel® Embedded and Communications Alliance, WIN Enterprises has extended its family of COM Express Module product line. With Intel latest ultra low power solution, MB-62020 is the ideal choice for the applications that demand low power and fan-less environment.

MB-62020 adopts the Intel® Atom<sup>™</sup> processor Z5xx series and Intel® System Controller Hub US15W, with total TDP less than 5 watts. It supports SO-DIMM system memory slot for DDR2 SDRAM up to 2GB, and comes with one SD card slot on module.

The COM Express module shows advantages of faster time to market, reduced product development cost and risk and easily adapts to various embedded applications. As a professional OEM/ODM solution provider in the Industrial PC (IPC) market, WIN Enterprises provides the customize service of COM Express carrier board to meet the specific project requirements.

# **1.2 Specification**

# System

CPU	Intel® Atom processor Z5xx series Onboard	
	Z530 SC 1.6GHz FSB 533MHz	
	Z510 SC 1.1GHz FSB 400MHz	
BIOS	AMI® 1MB SPI BIOS	
System Chipset	Intel® System Controller Hub US15W	
System Memory	1 x 200-pin DDRII socket supports DDR 533/400 max. up to	
	2GB w/o ECC registered	
Expansion	Two PCI-Express x1	
Interface	One PCI 2.3 32bits 33MHz	
Battery	Lithium 3V/200mAH	

# ■ *I/O*

I/O Interface	2 x SATA, 1 x Ultra ATA100/66, 1 x SDIO w/SD card slot, 1 x LPC & I2C bus
USB	6 x USB ports, USB 2.0 compliant ( 5 USB host, 1 USB client)
Audio	High definition audio interface

### Ethernet

Chipset	One Intel® 82574L, PCI-E x1 interface		
	One ASIX AX88772A, USB interface		
Speed	10/100/1000Mbps		
	10/100Mbps		
Interface	2 x RJ-45		
Standard	IEEE 802.3 10/100/1000 Mbps Compliant Physical Layer		
	IEEE 802.3 10/100 Mbps Compliant Physical Layer		

# Display

Chipset	Intel® System Controller Hub US15W
Memory Size	Max. up to 256MB sharing system memory
Resolution	LCD display mode:
	1024 x 768@16bpp (60Hz)
LCD/ LVDS	18/24-bitTFT LCD
Interface	

# Mechanical and Environment

Form Factor	PICMG COM Express COMPACT form factor, pin-out type II
Dimension ( L x W	95mm (L) x 95mm (W)
)	(3.8" L x 3.8" W)
Operating	0°C ~ 60°C(32°F ~ 140°F)
Temperature	

Operating	10% ~ 95 relative humidity, non-condensing
Humidity	
Storage	-20°C ~ 85°C(-4°F ~ 185°F)
Temperature	
Storage Humidity	10% ~ 85% relative humidity, non-condensing

#### Power

Power Supply Voltage	AT or ATX power, +5V ± 5%, +12V ± 5%
Power Consumption	8~12W

#### Packing List

• 1 x MB-62020 SBC	;
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• 1 x CD (Manual, Quick installation guide, Utility driver)

# **1.3 Precautions**

Make sure you properly ground yourself before handling the MB-62020 board or other system components. Electrostatic discharge can be easily damage the MB-62020 board.

Do not remove the anti-static packing until you are ready to install the MB-62020 board.

Ground yourself before removing any system component from it protective anti-static packaging. To ground yourself, grasp the expansion slot covers or other unpainted parts of the computer chassis.

Handle the MB-62020 board by its edges and avoid touching its component.

# 1.4 Board Layout





# 1-5 Board Dimensions

Board Dimensions (mm) (Component Side)

**COM Express Connector Pin Out:** 

<u>A1</u>	CND	CND	B1
A2	GRED MDI3-	GRED ACT#	<b>H</b> 2
A3	CRED MDI34	I DC FRAMES	<b>B</b> 3
A4	GBE0 INK100#	TPC AD0	R4
A5	GBE0 LINK1000#	LPC AD1	85
A6	GBED MDI2-	LPC AD2	B6
<u>A/</u>	GBE0 MDI2+	LPC AD3	17
<u>A8</u>	GBED LINK#	LPC DRQ0#	00
<u>84</u>	GBE0_MDI1-	LPC_DRQ1#	810
A11	GBE0_MDI1+	LPC_CLK	D10 D11
A12	GND	GND	B12
A13	GBED_MDIO-	PWRBTN#	B13
A14	GBED_MDI0+	SMB_CK	B14
A15	GBEU CIREF		B15
A16	SUS SO#	SMD ALERIM SATA1 TV-	B16
A17	SATAD TY.	SATAL TY-	B17
A18	SUS SZ#	SUS STAT#	B18
A19	SATAO RX+	SATA1 RX+	B19
A20	SATAO RX-	SATAT RX-	FI20
<u></u>	GND	GND	821
× A22	SATA2 TX+	SATA3 TX+	B22 ×
X 823	SATA2 TX-	SATA3 TX-	B24 X
A-29	SUS_S5#	PWR_OK	D/29
X 426	SATA2_RX+	SATA3_RX+	B26
× A27	SATA2 RX-	SATA3 RX-	B27 X
A28	BATLOW#	WDT	B28 -
A29	AIA ACI#	AC SDINZ	B29
A30	AC DOTE	AC SDINT	B30
A31	AU Ral#	AC_SUNU	<b>B</b> 31
A32	AC BITCLK	SOVE	B32
A33	AC SDOUT	IDC OK	833
A34	BIOS DISABLE#	I2C DAT	R34
<u>A35</u>	THRMTRIP#	THRM#	835
XAD	USB6-	US87-	Hill X
× 63/	USB6+	US87+	100/ X
A-30	USB_6_7_OC#	USB_4_5_OC#	B20
A40	USB4-	USB5-	BM0
A/11	USB4+	USB5+	BM1
A42	GND	GND	H42
A43	USB2-	USB3-	B43
A44		U383+	B44
A45	USD 2 3 UC#		B45
A46	USB0+	LISB1+	B46
A47	VCC RTC	EXCD1 PERST#	FI47
<u>A48</u>	EXCD0 PERST#	EXCD1 CPPF#	B48
A49	EXCD0 CPPE#	SYS RESET#	649
A50	LPC_SERIRQ	CB RESET#	H5U DC4
<u></u>	GND	GND	001
X ASS	PCIE_TX5+	PCIE_RX5+	B53
X ASA	PCIE_TX5-	PCIE RX5	B54
- A55	GPIU	GP01	B55
C A55	PCIE_TX4+	PCIE_RX4+	B56 C
A57	PCIE_1X4-	PCIE_RX4-	B57
V A58	GNU DOIE TV2:	GPO2	B58 🧹
Q A59	POIL TAST	DOF BY2	B59 🗘
A60	GND	CND	B60 ***
	See 1997	Children (Children (Childr	

COM\_EXPRESS\_TYPE2\_AB

× A61	POIE TX2+	PCIE RX2+	B61 🗙
📿 A62	PCIE TX2	PCIE PX2	B62 📿
A63	GPI1	GP03	B63 🔿
A64	DOIE TV1.	BOIE BY1.	B64
A65			B65
A66	FUIE_IAI-		B66
A67	GND	WAKEU#	B67
A68	GPIZ	WAKE1#	B68
A69	POIE_TX0+	PCIE_RAU+	B69
A70	PCIE_TXU-	PCIE_RXU-	B70
A71	GND	GND	B71 🗸
A72	LVDS_A0+	LVDS_B0+	B72 🗘
A73	LVDS_AU-	LVDS_B0-	B73 C
Δ74	LVDS_A1+	LVDS_B1+	B74 C
A75	LVDS_A1-	LVDS_B1-	875 C
476	LVDS_A2+	LVDS_B2+	B78
A77	LVDS_A2-	LVDS_B2-	B77
A70	LVDS_VDD_EN	LVDS_B3+	B70 X
A70	LVDS_A3+	LVDS_B3-	B70 ×
A/9	LVDS_A3-	LVDS_BKLT_EN	D/8
Aou	GND	GND	DOU
A81	LVDS_A_CK+	LVDS_B_CK+	B81 X
<u>A82</u>	LVDS A CK-	LVDS B CK-	B82 X
A83	LVDS 12C CK	LVDS BKLT CTRL	883
A84	LVDS 12C DAT	VCC 5V SBY	884
A85	GPI3 GPI3	VCC_5V_SBY	885
A80	KBD RST#	VCC 5V SBY	880
A8/	KBD A20GATE	VCC_5V_SBY	887
A88	PCIE0_CK_REF+	RSVD	B88 X
A89	PCIE0 CK REF-	VGA_RED	B09 ×
A90	GND	GND	B90
XAN	RSVD	VGA_GRN	Bal X
X A92	RSVD	VGA BLU	B92 ×
A93	GP00	VGA HSYNC	B83 X
XANA	RSVD	VGA VSYNC	Bae X
XA95	RSVD	VGA I2C CK	B80 X
A96	GND	VGA IZC DAT	Bag X
A9/	VCC 12V	TV DAC A	B8/ X
A98	VCC 12V	TV DAC B	B98 ×
A99	VCC <sup>12V</sup>	TV DAC C	B99 X
A100	GND	GND	8100
A101	VCC 12V	VCC 12V	B101
A102	VCC 12V	VCC 12V	8102
A103	VCC 12V	VCC <sup>12V</sup>	8103
A104	VCC 12V	VCC 12V	8104
A105	VCC 12V	VCC 12V	B105
A106	VCC 12V	VCC 12V	B106
A107	VCC 12V	VCC 12V	B107
A108	VCC 12V	VCC 12V	B108
A109	VCC 12V	VCC 12V	B109
A110	GND	GND	B110

Note: Symbol (X) means signal is not used.

COM\_EXPRESS\_TYPE2\_AB

# COM\_EXPRESS\_TYPE2\_CD

			_
<u></u>	GND	GND	<u>P1</u>
	IDE D7	IDE D5	
	IDE_D6	IDE_D10	13
	IDE D3	IDE D11	L/4
	IDE_D15	IDE_D12	
	IDE_D8	IDE_D4	177
<u>C8</u>	IDE_D9	IDE DO	D/S
C9	IDE_D2	IDE_REQ	D9
C10	IDE_D13	IDE_IOW#	D10
C11		IDE_ACK#	D11
C12	GND DE DE L	GND	D12
C13	IDE_D14	IDE_IRQ	D13
C14	IDE IORDY		D14
C15	DCCDME#		D15
C16	DOL ONTO#		D16
C17	PCI REQ2#	IDE CS3#	D17
C18	DCL CNT1#	IDE RESETE	D18
C19	PCI REO1#	PCI GNT3#	D19
C20	PCI_GNT0#	PCI_REQ3#	D20
C21	GND	GND	021
<u></u>	PCI REQ0#	PCI AD1	022
C23	PCI RESET#	PCI AD3	172.3
<u>C24</u>	PCITADO	PCITAD5	124
<u> </u>	PCI AD2	PCI AD7	125
<u> </u>	PCI_AD4	PCI_C/BEO#	126
()_()	PCI_AD6	PCI_AD9	LK(
C20	PCI_AD8	PCI_AD11	T720
C30	PCI_AD10	PCI_AD13	020
C31	PCI_AD12	PCI_AD15	131
632	GND	GND	0.82
C33	PCL AD14		D33
C34		PG_SERR#	D34
C35	POL PERRH	PGI STUP#	D35
C36			D36
C37	DCTIRDY#	DCI AD16	D37
C38	PCI_C/BE2#	PCI AD18	D38
C39	PCI AD17	PCITAD20	D39
C40	PCL AD19	PCI_AD22	D40
C41	GND	GND	L241
<u>C42</u>	PCI AD21	PCI AD24	D42
	PCI AD23	PCI AD26	D43
C44	PCIC/BE3#	PCI_AD28	DM4
045	PCI_AD25	PCI AD30	D45
C40	PCI_AD27	PCI_TRQC#	D410
C48	PCI_AD29	PCI_IRQD#	D48
C/0	PCI_AD31	PCI_CLKRUN#	DM9
C50	PCI_IKQA#	PCI_M66EN	D50
C51	PCI IRQB#	PCI_CLK	D51
C52	GNU DEO DYA:	GND	152
C53	PEG KX0+	PEG TX04	153
$\sim$ C54	TYDEO#		D54
^ C55	DEC RY12	DEC TYPE	D55
C56	REG RV1	PEG_IAIt	D56
× C57	TYDE1#		D57 😪
$^{\circ}C58$	PEG RX2+	PEG TX2+	D58 ^
C59	PEG RX2-	PEG TO2-	D5/9
C60	GND	GND	D60

Note: Symbol (X) means the signal is not used.

✓ C61	DEG DY2.	PEG TY2.	D61
C C62	PEG RX3+	PEG_TX2	D62
C C63	PEU RAS-	PEO_1X3-	D63 🗸
C C64	RSVD	RSVD	D64 🗘
C C65	RSVD REC RVA:	DEC TYA	D65 🗘
C 666	PEG_RX4+	PEG_1X4+	D66 🗘
C C67	PEG_RA4-	PEG_1X4-	D67 ^
C 68	ROVD DVE	GND	D68 🗸
C C69	PEG_RAD+	PEG_1X0+	D69 🗘
^ C70	PEG_RAD-	PEG_1AD-	D70 ^
V C71	DEG DVA	PEG TYR:	D71 🗸
<u>C C72</u>	DEG DV8	PEG_TX8	D72 🗘
^ C73	SDVO DATA	SDVO CLK	D73 ^
C74	BEC BYZ	SDVO_OLK	D74 🗸
C C75	PEG_RA/+	PEG_IX/+	D75 🗘
	CND	PEG_1A/-	D76 ^
V C77	BRVD		D77
C C78	DEC DV0.	DEC TV0	D78 🗸
C C79	PEG_RA0+	PEG_TA0+	D79 🗘
^ C80	PEG_RA8-	PEG_1X8-	D80 ^
C81	GND DYA.	GND	D81 🗸
C C82	PEG_RX8+	PEG_TX9+	D82 🗘
C C83	PEG_RA8-	PEG_1X9-	D83 🗘
^ C84	RSVD	RSVD	D84 ^
C85	DEC DV10.	DEC TY10.	D85 🗸
C C86	PEG_RATU+	PEG_1X10+	D86 🗘
C87	GND	PEG_IXID-	D87 ^
× C88	PEG RX11+	PEG TX11+	D88 🗙
<u>Ç C89</u>	PEG RX11-	PEG TX11-	D89 📿
C90	GND	GND	D90 🗥
× C91	PEG RX12+	PEG TX12+	D91 ×
<u>, C92</u>	PEG RX12	PEG_TX12-	D92 📿
C93	GND	GND	D93
× C94	PEG RX13+	PEG TX13+	D94 🗙
× C95	PEG RX13-	PEG TX13-	D95 🗙
C96	GND	GND	D96 1
× C97	RSVD	PEG ENABLE#	D97 ×
× C98	PEG RX14+	PEG TX14+	D98 📿
× C99	PEG RX14-	PEG TX14-	D99 🗙
C100	GND	GND	D100
×C101	PEG RX15+	PEG TX15+	D101 <sub>X</sub>
C102	PEG RX15-	PEG TX15-	D102
C103	GND	GND	D103
C104	VCC 12V	VCC 12V	D104
C105	VCC 12V	VCC 12V	D105
C106	VCC 12V	VCC 12V	D106
C107	VCC 12V	VCC 12V	D107
C108	VCC 12V	VCC 12V	D108
C109	VCC 12V	VCC 12V	D109
C110	GND	GND	D110
		0.10	
	COM EXPRESS TYP	E2.0D	1
	COM_EXPRESS_TYP	E2_00	

Note: Symbol (X) means the signal is not used.

For base board connector and jumper setting, please reference the MB-73220 COM Express evaluation board quick setup guide.

# Chapter 3. BIOS Setup

# 3.1 Entering the CMOS Setup Program

Use the CMOS Setup program to modify the system parameters to reflect the options installed in your system and to customize your system. For example, you should run the Setup program after you:

- 1. Received an error code at startup
- 2. Install another disk drive
- 3. Use your system after not having used it for a long time
- 4. Find the original setup missing
- 5. Replace the battery
- 6. Change to a different type of CPU
- 7. Run the Flash program to update the system BIOS

Run the CMOS Setup program after you turn on the system. On-screen instructions explain how to use the program.

#### $\prod$ Enter the CMOS Setup program's main menu as follows:

- Turn on or reboot the system. After the BIOS performs a series of diagnostic checks, the following message appears: "Press DEL to enter SETUP"
- 2. Press the <DEL> key to enter CMOS Setup program. The main menu appears:

NainAdvancedPCIPnPBootSecurityChipsetExitSystem OverviewUse IENTERI, ITABI or ISHIFT-TABI to select a field.Use IENTERI, ITABI or ISHIFT-TABI to select a field.AMIBIOS Version :08.00.15 Build Date:09/11/09 ID :71100009Use I+1 or I-1 to configure system Time.Use I+1 or I-1 to configure system Time.Processor Speed :255MHz Count :255System Memory Size :1019MB+ Select Screen t Select Item +- Change Field			BIOS SE	TUP UTILITY		
System Overview       Use IENTERI. ITABI         AMIBIOS       or ISHIFT-TABI to select a field.         Version :08.00.15       Use I+1 or I-1 to use I+1 or I-1 to configure system Time.         Processor       Speed :255MHz count :255         System Memory Size :1019MB       + Select Screen the select Item +- Change Field	Main Advanced	PCIPnP	Boot	Security	Chi	ipset Exit
AMIBIOS       Select a field.         Version :08.00.15       Build Date:09/11/09         Build Date:09/11/09       Use [+] or [-] to configure system Time.         Processor       Configure system Time.         Speed :255MHz          Count :255          System Memory          Size :1019MB          File          Sustem Line          Sustem Line	System Overview					Use [ENTER], [TAB]
Processor     Speed     :255MHz       Support     :255       System Memory     * Select Screen       Size     :1019MB       Support     14 Select Item       *-     Change Field       Support     Table Select Field	AMIBIOS Version :08.00 Build Date:09/11 ID :71100	. 15 /09 009				Use [+] or [-] to configure system Time.
Speed       :255MHz         Count       :255         System Memory       + Select Screen         Size       :1019MB         Sustem Time       [14:12:57]         Sustem Time       [14:12:57]	Processor					
System Memory+Select ScreenSize:1019MB14Select ItemSustem Time[14:12:57]Tab. Select Field	Speed :255M Count :255	z				
Suctor Tire [14:12:57] Tab Coloct Field	<b>System Memory</b> Size :1019M	B				<ul> <li>← Select Screen</li> <li>↑↓ Select Item</li> <li>+- Change Field</li> </ul>
System Date [Fri 09/11/2009] F1 General Help F10 Save and Exit	System Time System Date		[14:1] [Fri	2:57] 09/11/2009]		Tab Select Field F1 General Help F10 Save and Exit
CMC Lo-Module:0D2.025x, Hi-Module:0D2.017x ESC Exit	CMC Lo-Module:01	2.025x, Hi-	-Module:0	D2.017x		ESC Exit

3. Choose a setup option with the arrow keys and press <Enter>. See the following sections for a brief description of each setup option.

AMIBIOS: Displays the auto-detected BIOS information.
Processor: Displays the auto-detected CPU specification.
System Memory: Displays the auto-detected system memory.
SystemTime: [hour:min:sec]
This item allows you to set the system time.
System Date: [Day mm/dd/yyyy]
This item allows you to set the system date.

In the main menu, press F10 ("Save Changes and Exit") to save your changes and reboot the system. Choosing "Discard Changes and Exit" ignores your changes and exits the program. Pressing <ESC> anywhere in the program returns you to the main menu.

# 3.2 Menu Options

The main menu options of the CMOS Setup program are described in the following and the following sections of this chapter.

Main: For changing the basic system configurations.

Advanced: For changing the advanced system settings.

**PCIPnP:** For changing the advanced PCI/PnP Settings.

**Boot:** For changing the system boot configurations.

**Security:** Use this menu to set User and Supervisor Passwords.

**Chipset:** For changing the chipset settings.

**Exit:** For selecting the exit options and loading default settings.

## 3.3 Advanced Menu

The Advanced menu items allow you to change the settings for the CPU and other system devices.

**Use the Advanced Setup option as follows:** Y. Choose "Advanced" from the main menu. The following screen appears:

			BIOS SE	TUP UTILITY				
Main	Advanced	PCIPnP	Boot	Security	Ch	ipset	Power	Exit
Main Advanc WARNIN > CPU > IDE	Advanced ced Settings IG: Setting w may cause Configuration Configuration	PCIPnP rong value system to n n	Boot s in bel malfunc	Security ow sections tion.	<u>Ch</u>	ipset Confi	Power	Exit
<ul> <li>Supe</li> <li>Hard</li> <li>ACPI</li> <li>Ever</li> <li>MPS</li> <li>PCI</li> </ul>	rIO Configura Ware Health Configuration t Log Configuration Configuration Express Conf	ation Configurat on uration n iguration	ion			<del>63</del>	Select S	Green
► Remc ► USB	ote Access Co Configuration	nfiguratio N	n			†4 Enter F1 F10 ESC	Select I Go to Su General Save and Exit	tem db Screen Help L Exit
	v02.58 (	C) Copyr igh	t 1985-2	004, America	n Meg	gatrend	ls, Inc.	

- 2. Use the arrow keys to move between fields. Modify the selected field using the PgUP/PgDN/+/- keys. Some fields let you enter numeric values directly.
- 3. After you have finished with the Advanced setup, press the <ESC> key to return to the main menu.

**3.3.1 CPU Configuration** This sub menu shows the CPU-related information which is automatically detected by BIOS.

BIOS SETUP UTILITY	
Configure advanced CPU settings Module Version:3F.11	Disabled for WindowsXP
Manufacturer:Intel Frequency :1.10GHz FSB Speed :400MHz Cache L1 :0 KB Cache L2 :0 KB Ratio Actual Value:11 Max CPUID Value Limit Disabled] Execute-Disable Bit Capability Enabled] Intel (R) SpeedStep(tm) tech Enabled] Intel (R) C-STATE tech Enabled] Intel (R) C-STATE tech Enabled] Enabled] Enabled] Enabled]	<ul> <li>Select Screen</li> <li>Select Item</li> <li>Change Option</li> <li>General Help</li> <li>Save and Exit</li> <li>ESC Exit</li> </ul>

#### 3.3.2 IDE Configuration

This sub menu allows you to set or change the configurations for the IDE devices installed in the system.

B	IOS SETUP UTILITY	
Advanced		
IDE Configuration		Options
ATA/IDE Configuration Primary IDE Master Primary IDE Slave Hard Disk Write Protect IDE Detect Time Out (Sec) ATA/IDE Cable Detection	[Compatible] : [Not Detected] : [Not Detected] [Disabled] [35] [Device]	Disabled Compatible
JMicron 36x ATA Controller	[IDE Mode]	<ul> <li>← Select Screen</li> <li>↑↓ Select Item</li> <li>+- Change Option</li> <li>F1 General Help</li> <li>F10 Save and Exit</li> <li>ESC Exit</li> </ul>
u02.61 (C) Comuniant	1985-2006, American Me	watrends. Inc.

#### **Primary \* IDE Master**

This information is auto-detected by BIOS and is not user-configurable. It will show "Not Detected" if no IDE device is installed in the system.

#### **Primary IDE Slave**

This information is auto-detected by BIOS and is not user-configurable. It will show "Not Detected" if no IDE device is installed in the system.

Following screens allow you to setup the parameters of IDE devices.

BIOS SETUP UTILITY	
Advanced         Primary IDE Master         Device :Not Detected         Type IAutol         LBA/Large Mode IAutol         Block (Multi-Sector Transfer) IAutol         PIO Mode IAutol         DMA Mode IAutol         S.M.A.R.T.         J2Bit Data Transfer	Select the type of device connected to the system.
v02.61 (C)Copyright 1985-2006, American Meg	F1 General Help F10 Save and Exit ESC Exit gatrends, Inc.
BIOS SETUP UTILITY	

Havancea		
Primary IDE Slave		Select the type
Device :Not Detected		to the system.
Type LBA/Large Mode Block (Multi-Sector Transfer) PIO Mode DMA Mode S.M.A.R.T. 32Bit Data Transfer	[Auto] [Auto] [Auto] [Auto] [Auto] [Auto] [Enabled]	
		<ul> <li>← Select Screen</li> <li>↑↓ Select Item</li> <li>+- Change Option</li> <li>F1 General Help</li> <li>F10 Save and Exit</li> <li>ESC Exit</li> </ul>
v02.61 (C)Copyright	1985-2006, American Meg	gatrends, Inc.

### 3.3.3 Super IO Configuration

	BIOS SETUP UTILITY	
Advanced		
Configure Win627 Super IO C	hipset	Allows BIOS to Enable
OnBoard Floppy Controller Floppy Drive Swap Serial Port1 Address Serial Port2 Address Serial Port2 Mode OnBoard CIR Port Parallel Port Address Parallel Port Mode Parallel Port IRQ OnBoard Game Port OnBoard MIDI Port	LEnabled] [Disabled] [3F8/IRQ4] [2F8/IRQ3] [Normal] [Disabled] [378] [Normal] [IRQ7] [Disabled] [Disabled]	<ul> <li>Controller.</li> <li>Controller.</li> <li>Select Screen</li> <li>Select Item</li> <li>Change Option</li> <li>F1 General Help</li> <li>F10 Save and Exit</li> <li>ESC Exit</li> </ul>
u02_61_(f) Comunia	ht 1985-2006, America	n Megatrends. Inc

#### Serial Port1 Address: [3F8/IRQ4]

Selects the Serial Port1 base address and IRQ.

#### Serial Port2 Address: [2F8/IRQ3]

Selects the Serial Port2 base address and IRQ.

# Parallel Port Address: [378]

Selects the Parallel Port base addresses. **Parallel Port Mode: [Normal]** Selects the Parallel Port mode. **Parallel Port IRQ: [IRQ7]** Selects the Parallel Port IRQ.

**3.3.4 Hardware Health Configuration** This screen shows you the CPU core voltage, System voltage, System temperature.

Advanced	BIOS SETUP UTILITY	
Hardware Health Configur	ation	
System Temperature	:51°C/123°F	
Vcore +3.3V +12V +1.5V +5V	:1.128 V :3.312 V :12.302 V :1.520 V :4.812 V	<ul> <li>← Select Screen</li> <li>↑↓ Select Item</li> <li>F1 General Help</li> <li>F10 Save and Exit</li> <li>ESC Exit</li> </ul>
v02.61 (C) Copu	right 1985-2006, American	Megatrends, Inc.

**3.3.5 ACPI Configuration** This sub menu is used to change the settings for the ACPI.

BIOS SETUP UTILITY	
Advanced	
ACPI Settings	General ACPI
<ul> <li>General ACPI Configuration</li> <li>Advanced ACPI Configuration</li> <li>Chipset ACPI Configuration</li> </ul>	<ul> <li>← Select Screen</li> <li>↑↓ Select Item</li> <li>Enter Go to Sub Screen</li> </ul>
	F1 General Help F10 Save and Exit ESC Exit
v02.61 (C)Copyright 1985-2006, American Me	gatrends, Inc.

This sub menu is used to change the settings for the ACPI.

	BIOS SETUP UTILITY	
Advanced		
General ACPI Configuration		Select the ACPI
Suspend mode Repost Video on S3 Resume	IS3 (STR)] INO]	<ul> <li>← Select Screen</li> <li>↑↓ Select Item</li> <li>+- Change Option</li> <li>F1 General Help</li> <li>F10 Save and Exit</li> <li>ESC Exit</li> </ul>
02.64.703.0	L 4005 2006 A 1 M	

BIOS SETUP UTILITY Advanced Advanced ACPI Configuration Enable RSDP pointers to 64-bit Fixed System [ACPI v3.0] ACPI Version Features Description Tables. Di ACPI APIC support [Enabled] ACPI version has some AMI OEMB table [Enabled] Headless mode [Disabled] Select Screen ÷ **†**↓ Select Item Change Option +-F1 General Help F10 Save and Exit ESC Exit v02.61 (C)Copyright 1985-2006, American Megatrends, Inc.

#### Advanced ACPI Configuration:

This sub menu configures additional ACPI options. It contains below sub-menus:

#### ACPI Version Features: [ACPI v3.0]

This item allows you to enable or disable RSPD pointers to 64-bit Fixed System Description Tables.

#### ACPI APIC support: [Enabled]

This item allows you to enable or disable APIC features.

#### AMI OEMB table: [Enabled]

This item allows you to enable or disable OEMB features.

#### Headless mode: [Disabled]

This item allows you to enable or disable headless features.

BIOS SETUP UTILITY	
Advanced	
South Bridge ACPI Configuration	Enable/Disable
APIC ACPI SCI IRQ Disabled USB Device Wakeup From S3/S4 Disabled	<ul> <li>← Select Screen</li> <li>↑↓ Select Item</li> <li>← Change Option</li> <li>F1 General Help</li> <li>F10 Save and Exit</li> <li>ESC Exit</li> </ul>
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This sub menu is used to change the bridge settings for the ACPI.

# 3.3.6 H/W Health Function

This sub menu shows the CPU temperature:

	BIOS SETUP UTILITY	
Advanced		
H/W Health Function	[Enabled]	Enables Hardware
CPU Temperature Reading	:59°C/138°F	Device.
		<ul> <li>← Select Screen</li> <li>↑↓ Select Item</li> </ul>
		+- Change Option F1 General Help
		F10 Save and Exit ESC Exit
	oht 1985-2006, American	n Megatrends, Inc.

**3.3.7 MPS Configuration** This sub menu allows you to select MPS Revision.

	BIOS SETUP UTILITY	
Advanced		
MPS Configuration	n	Select MPS
MPS Revision	[1.4]	
		<ul> <li>↔ Select Screen</li> <li>↑↓ Select Item</li> <li>+- Change Option</li> <li>F1 General Help</li> <li>F10 Save and Exit</li> <li>ESC Exit</li> </ul>
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**3.3.8 PCI Express Configuration** This sub menu allows you to enable or disable Active State Power-Management :

BIOS SETUP UTILITY			
Advanced			
PCI Express Configuration	Enable/Disable		
Active State Power-Management [Enabled]	<ul> <li>CI Express L0s and L1 link power states.</li> <li>★ Select Screen</li> <li>↑↓ Select Item</li> <li>+- Change Option</li> <li>F1 General Help</li> <li>F10 Save and Exit</li> <li>ESC Exit</li> </ul>		
u02.61 (C)Comuright 1985-2006, American Meg	atrends. Inc.		

# 3.3.9 Smbios Configuration

This sub menu allows you to enable or disable Smbios :

	Smbios Configuration Screen	
Advanced		
Smbios Configuration		SMBIOS SMI Wrapper support for PnP Func
Smbios Smi Support	[Enabled]	50h-54h
		← Select Screen
		+- Change Option
		F1 General Help F10 Save and Exit
		ESU EXIT
v02.61 (C)Co	pyright 1985-2006, American Meg	gatrends, Inc.

#### 3.3.10 USB Configuration

This sub menu allows you to change the USB-related features.

BIOS SETUP UTILITY	
Advanced	
USB Configuration	Enables support for
Module Version - 2.24.3-13.4	option disables legacy support if
USB Devices Enabled : 4 Drives	no USB devices are connected.
Legacy USB Support[Enabled]USB 2.0 Controller Mode[HiSpeed]BIOS EHCI Hand-Off[Enabled]	
▶ USB Mass Storage Device Configuration	<ul> <li>← Select Screen</li> <li>↑↓ Select Item</li> <li>← Change Option</li> <li>F1 General Help</li> <li>F10 Save and Exit</li> <li>ESC Exit</li> </ul>
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#### Legacy USB Support: [Enabled]

Enables support for legacy USB. AUTO option disables legacy support if no USB devices are connected.

### USB 2.0 Controller Mode: [FullSpeed]

This item allows you to configure the USB 2.0 controller in HiSpeed(480Mbps) or FullSpeed(12Mbps).

#### **BIOS EHCI Hand-Off**

This item allows you to Enable/Disable BIOS EHCI Hand-Off

#### **USB Mass Storage Device Configuration**

This item allows you to configure USB Mass Storage Device

# 3.4 PCIPnP Menu

This PCIPnP menu items allow you to change the settings for the advanced PCI/PnP.

#### Use the PCIPnP Setup option as follows:

Y. Choose "PCIPnP" from the main menu. The following screen appears:

		BIOS SE	TUP UTILITY			
Main Advanced	PCIPnP	Boot	Security	Chi	pset	Exit
Advanced PCI/PnP	Settings				Clear	r NVRAM during
WARNING: Setting may caus	wrong value e system to		Jyste	5m 100 C -		
Clear NURAM Plug & Play O/S PCI Latency Timer Allocate IRQ to P Palette Snooping PCI IDE BusMaster OffBoard PCI/ISA IRQ3 IRQ4 IRQ5 IRQ7 IRQ9 IRQ10 IRQ11	CI VGA IDE Card	INo] INo] IG4] IYes] IDisa IEnab IAuto IAuai IAvai IAvai IAvai IAvai IAvai	bled] led] ] lable] lable] lable] lable] lable] lable] lable]		↓ ↓↓ ↓ F1 F10 ESC	Select Screen Select Item Change Option General Help Save and Exit Exit
v02.61	(C) Copyr igh	t 1985-2	006, America	n Meg	atrend	ls, Inc.

2. Use the arrow keys to move between items and to select values. Modify the selected fields using the PgUP/PgDN keys. Press the <F1> "Help" key for information on the available options:

3. After you have finished with the PCIPnP Setup, press the <ESC> key to return to the main menu.

#### **Clear NVRAM**

This item allows you to clear the BIOS setting

#### Plug & Play O/S: [No]

No: lets the BIOS configure all the devices in the system. Yes: lets the OS configure Plug & Play devices not required for boot if your system has a Plug & Play operating system.

#### PCI Latency Timer: [64]

This item allows you to select the value in units of PCI clocks for the PCI device latency timer register. This setting controls how many PCI clocks each PCI device

can hold the bus before another PCI device takes over.

#### Allocate IRQ to PCI VGA: [Yes]

BIOS assigns an IRQ to PCI VGA card if the card requests for an IRQ.

#### Palette Snooping: [Disabled]

This item allows you to enable or disable the feature. When set to [Enabled], the palette snooping feature informs the PCI devices that an ISA graphics device is installed in the system so that the device can function correctly.

#### PCI IDE BusMaster: [Enabled]

This item allows you to enable or disable the feature. Enable: BIOS uses PCI bus mastering for reading/writing to IDE devices.

#### **OffBoard PCI/ISA IDE Card**

This item allows you to configure the setting of OffBoard PCI/ISA IDE Card.

#### **Reserved Memory Size: [Disabled]**

This item allows you to select the reserved memory for legacy ISA devices.

# 3.5 Boot Menu

# $\int U$ use the Boot Setup option as follows:

1. Choose "Boot" from the main menu. The following screen appears:

			BIOS SE	TUP UTILITY		
Main	Advanced	PCIPnP	Boot	Security	Ch	ipset Exit
Boot S Boot Boot Remo	ettings Settings Co Device Prio vable Drives	nfiguratio rity	m			Configure Settings during System Boot.
						<ul> <li>← Select Screen</li> <li>↑↓ Select Item</li> <li>Enter Go to Sub Screen</li> <li>F1 General Help</li> <li>F10 Save and Exit</li> <li>ESC Exit</li> </ul>
	v02.61 (	C) Copyr igh	t 1985-2	006, American	n Med	atrends, Inc.

2. Move between items and select values by using the arrow keys. Modify the selected fields using the PnUP/PgDN Keys. For information on the various options, press <F1> key .

3. After you have finished with the Boot setup, press the <ESC> key to return to the main menu.

#### 3.5.1 Boot Settings Configuration

This item is used to configure system boot setting with below sub menus:

B	IOS SETUP UTILITY Boot		
Boot Settings Configuration Quick Boot Quiet Boot AddOn ROM Display Mode Bootup Num-Lock PS/2 Mouse Support	[Enabled] [Disabled] [Force BIOS] [On] [Auto]	Allows BIOS to skip certain tests while booting. This will decrease the time needed to boot the system.	
Wait For 'F1' Îf Error Hit 'DEL' Message Display Interrupt 19 Capture	[Enabled] [Enabled] [Disabled]	<ul> <li>← Select Screen</li> <li>↑↓ Select Item</li> <li>← Change Option</li> <li>F1 General Help</li> <li>F10 Save and Exit</li> <li>ESC Exit</li> </ul>	
	100E 200C Anonices Mer	vaturala. Ina	

#### Quick Boot: [Enabled]

This item allows BIOS to skip certain tests (POST, Power On Self Tests) while booting. This will decrease the time needed to boot the system.

#### Quiet Boot: [Disabled]

This item allows you to enable or disable the full screen logo display feature. Disabed: displays normal POST messages.

#### AddOn ROM Display Mode: [Force BIOS]

Allows you to configure AddOn ROM Display Mode.

#### Bootup Num-Lock: [On]

Allows you to select the Power-on state for the Num-Lock.

#### PS/2 Mouse Support: [Auto]

Allows you to configure PS/2 mouse support mode.

#### Wait for F1 if Error: [Enabled]

Allows you to enable or diable the wait for F1 if error function.

#### Hit Del Message Display: [Enabled]

Allows you to enable or diable the hit del message display function.

Interrupt 19 Capture: [Disabled] This item allows the option ROMs to trap Interrupt 19.

# 3.6 Security Menu

### **Use the Security Setup option as follows:**

1. Choose "Security" from the main menu. The following screen appears:

			BIOS SE	TUP UTILITY	Ŭ		
Main	Advanced	PCIPnP	Boot	Security	Ch	nipset Exit	
Secur i	ty Settings					Install or Change the	
Superv User P	isor Password assword	l :Not Ins :Not Ins	talled				
Change Change Clear	Supervisor I User Passwor User Password	Password rd I					
Boot S	ector Virus I	Protection	Disa	bledl			
						<ul> <li>← Select Screen</li> <li>↑↓ Select Item</li> <li>Enter Change</li> <li>F1 General Help</li> <li>F10 Save and Exit</li> <li>ESC Exit</li> </ul>	
	v02.61 ((	.) Copyr igh	t 1985-2	006, America	n Meg	gatrends, Inc.	

- 2. Move between items and select values by using the arrow keys. Modify the selected fields using the PgUP/PgDN keys. Please press the <F1> key for information on the various options.
- 3. After you have finished with the Security setup, press the <ESC> key to return to the main menu.

#### Change Supervisor Password:

This item allows you to set or change the supervisor password. The Supervisor Password item on top of the screen shows the default Not Installed. After you have set a password, this item shows Installed.

#### Change User Password:

This item allows you to set or change the user password. The User Password item on top of the screen shows the default Not Installed. After you have set a password, this item shows Installed.

#### Clear User Password:

This item allows you to clear the user password.

#### Boot Sector Virus Protection: [Disabled]

This item allows you to enable or disable the boot sector virus protection. If enabled,

AMI BIOS will issue a warning when a virus or program attempts to write to the hard disk's boot sector or attempts to execute disk format command.

# 3.7 Chipset Menu

Use the Chipset Setup option as follows:

1. Choose "Chipset" from the main menu. The following screen appears.



- 2. Move between items and select values by using the arrow keys. Modify the selected field the PgUP/PgDN keys. For information on the various options, press <F1> key.
- After you have finished with the Chipset Setup, press the <ESC> key to return to
   the
   main
   menu.

BIOS SETUP UTILITY CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONT	ipset
North Bridge Chipset Configuration         Primary Graphics Adapter       [PCIe/IGD]         Integrated Graphics Mode Selec       [Enabled, 4MB]         ▶ Boot Display Configuration	Select which graphics controller to use as the primary boot device.
	<ul> <li>← Select Screen</li> <li>↑↓ Select Item</li> <li>+- Change Option</li> <li>F1 General Help</li> <li>F10 Save and Exit</li> <li>ESC Exit</li> </ul>
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#### Primary Graphics Adapter: [PCIe/IGD]

This item allows you to set the graphic adapter.

#### Internal Graphics Mode Select : [Enabled, 4MB]

Select the amount of system memory used by the internal graphics device.

### **Boot Display Configuration**

This item allows you to configure Boot Display Function.

#### 3.7.2 South Bridge Configuration

BIOS SETUP UTILITY						
	C	hipset				
South Bridge Chipset Configura	Number of UCHI					
USB Functions USB 2.0 Controller USB Client Controller SDIO Controller Audio Controller Codec	[6 USB Ports] [Enabled] [Disabled] [Enabled] [Auto]	ECHI ONLY is automatically added.				
Reserved Page Route SLP_S4# Min. Assertion Width Restore on AC Power Loss Serial IRQ Mode	[LPC] [1 to 2 seconds] [Last State] [Quiet]	← Select Screen				
PCIE Ports Configuration PCIE Port 0 PCIE Port 1	[Auto] [Auto]	<pre> fi Select Item +- Change Option F1 General Help F10 Save and Exit ESC Exit</pre>				
v02.61 (C) Comuriant	1985-2006, American M	egatrends, Inc.				

#### USB Functions: [6 USB Ports]

This item allows you to setup the USB ports.

#### USB 2.0 Controller: [Enabled]

This item allows you to enable or disable the USB 2.0 controller.

#### **USB Client Controller:** [Disabled]

This item allows you to enable or disable the USB Client controller.

#### SDIO Controller: [Enabled]

This item allows you to enable or disable the SDIO controller.

#### Audio Controller Codec: [Auto]

This item allows you to enable or disable the Audio controller.

#### Reserved Page Route: [LPC]

This item allows you to setup the reserved page route.

#### Restore on AC Power Loss: [Last State]

This item allows you to setup the restore on AC power loss.

#### Serial IRQ Mode: [Quiet]

This item allows you to setup the serial IRQ mode.

**PCIE Ports Configuration** This item allows you to setup the PCIE ports.

# 3.8 Exit

The item allows you to save or discard your changes to the BIOS items, and load the optimal defaults or failsafe defaults for the BIOS items.

# **☐Use the Exit option as follows:**

1. Choose "Exit" from the main menu, the following screen appears.

			BIOS SE	TUP UTILITY		
Main	Advanced	PCIPnP	Boot	Security	Ch	ipset <mark>Exit</mark>
Exit O	ptions					Exit system setup
Save C Discar	hanges and E d Changes an	xit d Exit				changes.
Discar	d Changes					F10 key can be used for this operation.
Load O Load F	ptimal Defau ailsafe Defa	lts ults				
						<ul> <li>← Select Screen</li> <li>↑↓ Select Item</li> <li>Enter Go to Sub Screen</li> <li>F1 General Help</li> <li>E10 Same and Emit</li> </ul>
						ESC Exit
	v02.61 (	C) Copur iah	t 1985-2	006, America	n Med	ratrends, Inc.

- 2. Move between items and select values by using the arrow keys. Modify the selected fields using the PgUP/PgDN keys. For information on the various options, please press <F1> key.
- 3. Please press the <ESC> key to return the main menu after finishing with the Exit Options.

### Save Changes and Exit:

Save changes of values to CMOS and exit the CMOS setup program. F10 key can be used for this operation.

#### Discard Changes and Exit:

Discard all CMOS changes and exit the CMOS setup program. ESC key can be used for this operation.

### Discard Changes:

Discard all CMOS changes and load the previously saved values. F7 key can be

used for this operation.

### Load Optimal Defaults:

This item allows you to load optimal defaults for each of the parameters on the Setup menus, which will provide the best performance settings for your system. F9 key can be used for this operation.

### Load Failsafe Defaults:

This item allows you to load failsafe defaults for each of the parameters on the Setup menus, which will provide the most stable performance settings. F8 key can be used for this operation.

#### Chapter 4. Software & Driver Installation

The operation system and driver installation procedure must be performed first.

# **4.1 Operation System Installation** Please install the OS first after setup the hardware.

# 4.2 Ethernet Driver Installation

It supports one 10/100 and GbE Ethernet

3	1 mar	Rei and		Sec. and
Recycle Bin	📕 Device Manage	Ethernet Controller Properties	? 🛛	and the second
HD ADeck	File Action View	General       Driver       Details       Resources         Image: Controller       Ethernet Controller         Device type:       Other devices         Manufacturer:       Unknown         Location:       PCI bus 4, device 0, function 0         Device status       The drivers for this device are not installed. (Code 28)         To reinstall the drivers for this device, click Reinstall Driver.         Device usage:       Use this device (enable)		
		OK Cancel Apply		
start	📁 📕 🖳 Device Mar	nager		🧏 😕 🏷 🛄 🛄 🦁 3:27 AM









# 4.3 VGA Driver Installation













# 4.4 Audio Driver Installation









# 4.5 Intel Chipset Device Software Installation



