

Mini ITX Motherboard with Intel® H61 Express Chipset

# **User's Manual**

2<sup>nd</sup> Ed – 29 October 2012

Part No. E2047XH6101R

#### **FCC Statement**

THIS DEVICE COMPLIES WITH PART 15 FCC RULES. OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS:

(1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE.

(2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRED OPERATION.

THIS EQUIPMENT HAS BEEN TESTED AND FOUND TO COMPLY WITH THE LIMITS FOR A CLASS "A" DIGITAL DEVICE, PURSUANT TO PART 15 OF THE FCC RULES.

THESE LIMITS ARE DESIGNED TO PROVIDE REASONABLE PROTECTION AGAINST HARMFUL INTERFERENCE WHEN THE EQUIPMENT IS OPERATED IN A COMMERCIAL ENVIRONMENT. THIS EQUIPMENT GENERATES, USES, AND CAN RADIATE RADIO FREQUENCY ENERGY AND, IF NOT INSTALLED AND USED IN ACCORDANCE WITH THE INSTRUCTION MANUAL, MAY CAUSE HARMFUL INTERFERENCE TO RADIO COMMUNICATIONS.

OPERATION OF THIS EQUIPMENT IN A RESIDENTIAL AREA IS LIKELY TO CAUSE HARMFUL INTERFERENCE IN WHICH CASE THE USER WILL BE REQUIRED TO CORRECT THE INTERFERENCE AT HIS OWN EXPENSE.

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# Content

1.	Get	ting Star	ted	4		
	1.1	1 Safety Precautions				
	1.2	Packing I	_ist	4		
	1.3	Spe	cifications	5		
2	Har	dware Co	onfiguration	7		
	2.1	Pro	duct Overview	8		
		2.1.1	Main board layout	8		
		2.1.2	Connecting Rear Panel I/O Devices			
	2.2		per and Connector List			
	2.3	Sett	ing Jumpers & Connectors			
		2.3.1	Additional USB Port Headers (FUSB1/FUSB2)	.11		
		2.3.2	JME			
		2.3.3	CMOS Memory Clearing Header (JBAT)			
		2.3.4	CPU/System Fan Power Connectors Header (CFAN/SFAN1/SFAN2)	.12		
		2.3.5	ATX Power Input Connectors (PWR12V/ATXPWR)	.13		
		2.3.6	Front Panel Switches (FPANEL)	.13		
		2.3.7	Speaker Headers (SPEAK)			
		2.3.8	Front Panel Audio Connection Header (F_AUDIO)	.15		
3. E		•				
	3.1		ting Setup			
	3.2		ng Setup			
	3.3		ting Help			
	3.4		ase of Problems			
	3.5	BIO	S setting	.19		
		3.5.1 Ma	in Menu	.19		
			vanced Setting			
			ipset Setting			
4. C	rive		ation			
	4.1		all Chipset Driver (For Intel H61 Express)			
	4.2		all Display Driver (For Intel H61 Express)			
	4.3		all Audio Driver (For Realtek)			
	4.4		all Ethernet Driver (For Realtek PCIE)			
	4.5	Inst	all USB3.0 Driver (For USB3)	.41		

# **1. Getting Started**

#### **1.1 Safety Precautions**

#### Warning!



Always completely disconnect the power cord from your chassis whenever you work with the hardware. Do not make connections while the power is on. Sensitive electronic components can be damaged by sudden power surges. Only experienced electronics personnel should open the PC chassis.

Caution!

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

**Always note** that improper disassembling action could cause damage to the motherboard. We suggest not removing the heatsink without correct instructions in any circumstance. If you really have to do this, please contact us for further support.

# **1.2 Packing List**

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

- Rear I/O bracket X 1
- Quick Installation Guide X 1
- Driver/Utility CD X 1
- Serial ATA Signal Cable X 2

# 1.3 Specifications

	EMX-H61		
Title	Intel® Core™ i7, Core™ i5, Core™ i3, Pentium® /Celeron® Mini ITX		
	Montherboard with Intel® H61 Express Chipset		
	Intel® LGA1155 socket Supports Core™ i7, Core™ i5, Core™ i3,		
	Pentium® and Celeron® processors		
	Intel® H61 Express Chipset		
	Two 240-pin DIMM sockets up to 8GB Dual Channel unbuffered DDR3		
	1066/1333MHz SDRAM		
Features	VGA , DVI -D, HDMI		
	Realtek® ALC892 7.1-Channel High-Definition Audio codec		
	Dual Broadcom® 57788 PCI-Express Gigabit Ethernet		
	1 x PCIex16 , 1 x Mini PCIe		
	4 SATA II 3.0Gb/s , 2 x USB 3.0 Ports , 8 x USB 2.0 Ports		
	8 Channel Audio I/O jacks with S/PDIF Out connector		
Specifications			
System			
CPU	Intel® LGA1155 socket Supports Core™ i7, Core™ i5, Core™ i3,		
CFU	Pentium® and Celeron® processors		
BIOS	AMI UEFI 1 x 32Mbit Flash ROM BIOS		
System Chipset	Intel® H61 Express Chipset		
I/O Chip	Nuvoton NCT5577D		
System Memory	Two 240-pin DIMM sockets up to 8GB Dual Channel unbuffered DDR3 1066/1333MHz SDRAM		
Watchdog Timer	NA		
H/W Status	Monitoring temperature, Voltage, and Fan status.with Auto throttling		
Monitor	control		
Expansion	1 x PClex16 , 1 x Mini PCle		
I/O			
	4 SATA II 3.0Gb/s		
	1 x S/PDIF Out header		
MIO	2 x 4-pin fan connectors, 1 x 3-pin fan connectors		
	1 x Front panel high definition audio header		
	1 x Front System Panel connector		
	1 x Speaker header		

	2 x USB 3.0 Ports , rear I/O connectors		
USB	4 x USB 2.0 Ports ,rear I/O connectors		
	4 x USB 2.0 Ports , internal pin-header		
Parallel Port	NA		
PS2 KB/MS	NA		
DIO	NA		
Display			
Chipset	Intel® HD Graphics Media Accelerator 2000/3000 (Based on CPU type)		
Ompset	Support for DX10.1 and OpenGL3.0		
	VGA 2048X1536 @ 75 Hz		
Resolution	HDMI 1920 x 1200 @ 60 Hz		
Resolution	DVI –D 1920 x 1200 @ 60 Hz		
	(The DVI-D port does not support D-Sub connection by adapter)		
Dual Display	CRT+DVI, CRT+HDMI, DVI+HDMI		
Audio			
Audio Codec	Realtek® ALC892 7.1-Channel High-Definition Audio codec		
Audio Interface	Mic-in , Line-in,Line out , Center/Subwoofer, Rear R/L ,S/PDIF out		
Ethernet			
LAN Chip	Dual Broadcom® 57788 PCI-Express Gigabit Ethernet		
Ethernet	10/100/1000 Base-Tx Gigabit Ethernet		
Interface			
Mechanical &			
Environmental			
Power	+12V/+5V/+5Vsb/+3.3V/-12V		
Requirement			
Power Type	ATX		
	0 ~ 50°C (32 ~ 121°F)		
Storage Temp	-40 ~ 75°C (-40 ~ 75°F)		
Operating	0 ~ 90% Relative Humidity, Non-condensing		
Humidity			
Size (L x W)	6.69" x 6.6" (170mm x 170mm)		
Weight	0.88lbs (0.4kg)		
	Ordering Information: EMX—H61-A1R		
	Intel® Core™ i7, Core™ i5, Core™ i3, Pentium® /Celeron® Mini ITX		
Others	Montherboard with Intel® H61 Express Chipset and		
	VGA ,DVI-D ,HDMI, Audio ,2GbE , 1 PCIex16 , 1 Mini PCIe,4 SATA II, 2		
	x USB 3.0, 8 x USB 2.0, W/SATA Cable, Bracket / CD driver		

# 2Hardware Configuration

### 2.1 Product Overview

#### 2.1.1 Main board layout



#### 2.1.2 Connecting Rear Panel I/O Devices



#### 2.2 Jumper and Connector List

You can configure your board to match the needs of your application by setting jumpers. A jumper is the simplest kind of electric switch.

It consists of two metal pins and a small metal clip (often protected by a plastic cover) that slides over the pins to connect them. To "close" a jumper you connect the pins with the clip. To "open" a jumper you remove the clip. Sometimes a jumper will have three pins, labeled 1, 2, and 3. In this case, you would connect either two pins.



The jumper settings are schematically depicted in this manual as follows:

0 0		1 2 3 O
Open	Closed	Closed 2-3

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

Connectors on the board are linked to external devices such as hard disk drives, a keyboard, or floppy drives. In addition, the board has a number of jumpers that allow you to configure your system to suit your application.

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



NO.	Layout	No.	Layout
1	FUSB1/FUSB2	6	ATXPWR
2	JME	7	FPANEL
3	JBAT	8	SPEAK
4	CFAN/SFAN1/SFAN2	9	JSPDIF
5	PWR12V	10	F_AUDIO

# 2.3 Setting Jumpers & Connectors

#### 2.3.1 Additional USB Port Headers (FUSB1/FUSB2)





Pin No.	Definition	Pin No.	Definition
1	VCC	2	VCC
3	Data 0-	4	Data 1-
5	Data 0+	6	Data 1+
7	Ground	8	Ground
		10	NC

#### 2.3.2 JME





Can't refresh the ME



#### **Refresh the ME**





# 2.3.3 CMOS Memory Clearing Header (JBAT)



Normal\*

1	



1	

\* Default

#### 2.3.4 CPU/System Fan Power Connectors Header (CFAN/SFAN1/SFAN2)





#### CFAN/SFAN1:

Pin No.	Definition	
1	GND	
2	+12V	
3	RPM	
4	Control	

#### SFAN2:

Pin No.	Definition	
1	GND	
2	+12V	
3	RPM	



#### 2.3.5 ATX Power Input Connectors (PWR12V/ATXPWR)



PWR12V (+12V Power) connector

ATXPWR (ATX Power) connector



#### 2.3.6 Front Panel Switches (FPANEL)





HD\_LED (Red): Hard Drive LED connector RST (Blue): Reset Switch PWR\_ON (Black): Power Switch PWR\_LED (Green): Power/Standby LED

# PWRGD



# 2.3.7 Speaker Headers (SPEAK)



Pin No.	Definition	
1	SPK +	
2	NC	
3	NC	
4	SPK -	



# 2.3.8 Front Panel Audio Connection Header (F\_AUDIO)



Pin No.	Header	HD Audio Definition	AC97 Audio Definition
1	PORT1L	Microphone_Left	Microphone
2	AGND	Ground	Ground
3	PORT1R	Microphone_Right	MIC Power
4	PRESENCE#	-ACZ_DET	N/A
5	PORT2R	Line2_Right	Line out (R)
6	SENSE1_RETURN	AuD_R_Return	N/A
7	SENSE_SEND	FAUDIO_JD	N/A
8	No Pin	N/A	N/A
9	PORT2L	Line2_Left	Line Out(L)
10	SENSE2_RETURN	AuD_L_Return	N/A



# EMX-H61 User's Manual 3.1 Starting Setup

The BIOS is immediately activated when you first power on the computer. The BIOS reads the system information contained in the NVRAM and begins the process of checking out the system and configuring it. When it finishes, the BIOS will seek an operating system on one of the disks and then launch and turn control over to the operating system.

While the BIOS is in control, the Setup program can be activated in one of two ways:

By pressing <Del> immediately after switching the system on, or

By pressing the <Del> key when the following message appears briefly at the bottom of the screen during the POST (Power On Self Test).

# Press DEL to enter setup, F11 to popup

If the message disappears before you respond and you still wish to enter Setup, restart the system to try again by turning it OFF then ON or pressing the "RESET" button on the system case. You may also restart by simultaneously pressing <Ctrl>, <Alt>, and <Delete> keys. If you do not press the keys at the correct time and the system does not boot, an error message will be displayed and you will again be asked to.

# Press F1 to Continue, DEL to enter SETUP

# 3.2 Using Setup

Press F1 to pop up a small help window that describes the appropriate keys to use and the possible selections for the highlighted item.

Please check the following table for the function description of each control key.

Button	Description
$\uparrow$	Move to previous item
$\downarrow$	Move to next item
←	Move to the item in the left hand
$\rightarrow$	Move to the item in the right hand
Esc key	Main Menu Quit and not save changes into CMOS Status Page Setup Menu and Option Page Setup Menu Exit current page and return to Main Menu
Enter key	To bring up the selected screen
+ key	Increase the numeric value or make changes
- key	Decrease the numeric value or make changes
F1 key	General help, only for Status Page Setup Menu and Option Page Setup Menu
F7 key	Load the default
F8 key	Reserved
F9 key	Optimized Defaults
F10 key	Save all the CMOS changes, only for Main Menu

#### • Navigating Through The Menu Bar

Use the left and right arrow keys to choose the menu you want to be in.



Note: Some of the navigation keys differ from one screen to another.

#### • To Display a Sub Menu

Use the arrow keys to move the cursor to the sub menu you want. Then press <Enter>. A " $\geq$ " pointer marks all sub menus.

### 3.3 Getting Help

Press F1 to pop up a small help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window press <Esc> or the F1 key again.

#### 3.4 In Case of Problems

If, after making and saving system changes with Setup, you discover that your computer no longer is able to boot, the AMI BIOS supports an override to the NVRAM settings which resets your system to its defaults.

The best advice is to only alter settings which you thoroughly understand. To this end, we strongly recommend that you avoid making any changes to the chipset defaults. These defaults have been carefully chosen by both Award and your systems manufacturer to provide the absolute maximum performance and reliability. Even a seemingly small change to the chipset setup has the potential for causing you to use the override.

### 3.5 BIOS setting

#### 3.5.1 Main Menu

Once you enter the BIOS CMOS Setup Utility, the Main Menu will appear on the screen. The Main Menu allows you to select from several setup functions and two exit choices. Use the arrow keys to select among the items and press <Enter> to accept and enter the sub-menu.

Note that a brief description of each highlighted selection appears at the bottom of the screen.

and the second	<mark>- Copyright (C) 2011 Am</mark> Boot Security OverCloc	and the second
BIOS Information		Choose the system default language
BIOS Vendor	American Megatrends	5.5
Core Version	4.6.4.1	
Compliancy Resident Hangian	UEFI 2.0 SB00D510	→ ← : Select Screen
Project Version Build Date and Time	04/27/2011 18:13:24	↑↓: Select Item
	VI/ BI/ BVII 10-10-01	Enter: Select
Memory Information		+/-: Change Opt.
Total Memory	1024 MB (DDR3 1333)	F1: General Help
		F7: Previous Values
System Language	[English]	F8: Fail-Safe Values F9: Optimized Defaults
System Date	[Fri 03/04/2011]	F10: Save & Exit
System Time	[17:27:30]	ESC: Exit
Access Level	Administrator	
Version 2.11.1210	Copyright (C) 2011 Amer	ican Megatrends, Inc.



Note: The BIOS setup screens shown in this chapter are for reference purposes only, and may not exactly match what you see on your screen. Visit the Avalue website (<u>www.avalue.com.tw</u>) to download the latest product and BIOS information.

#### BIOS Information

This Item mainly introduce the BIOS related information, such as the BIOS version, the BIOS manufacturer, the program code versions, establish dates, memory capacity and frequency, choose the BIOS use of language, the setting of the system date and time, access BIOS user level, etc.

#### Memory Information

Displays the auto-detected system memory.

#### • System Date

This item sets the date you specify(usually the current date0in the format of [Month],[Date], and [Year].

#### System Time

This item sets the time you specify(usually the current time)in the format of [Hour],[Minute]and [Second].

# 3.5.2 Advanced Setting

Aptio Setup Utility - Copyright (C) 2011 American Megatrends,Inc.		
Main Advanced Chipset	Boot Security OverClock	save & Exit
Legacy OpROM Support Launch PXE OpROM Launch Storage OpROM	[Disabled] [Enabled]	Enable or Disabe Boot Option for Legacy Network Devices.
<ul> <li>ACPI Settings</li> <li>RTC Wake Settings</li> <li>CPU Configuration</li> <li>USB Configuration</li> <li>Power Management</li> <li>H/W Monitor</li> </ul>		<pre>→ +: Select Screen ↑ ↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F7: Previous Values F8: Fail-Safe Values F9: Optimized Defaults F10: Save &amp; Exit ESC: Exit</pre>
Version 2.11.1210. Copyright (C) 2011 American Megatrends, Inc.		

# Launch PXE OpROMOnboard Lan BootROM Control

These items can change Boot ROM of the LAN chipset.

#### • Launch Storage OpROM Policy

Setting old equipment storage ROM open and close, optional for Enalbed, Disbaled.

#### ► ACPI Settings

Click <Enter> key to enter its submenu.

Aptio Setup Utility - Copyright (C) 2011 American Megatrends,Inc. Advanced		
ACPI Sleep State	[Enabled]	Enables or Disabes BIOS ACPI Auto Configuration. → +: Select Screen ↑ ↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F7: Previous Values 
Version 2.11.1210. Copyright (C) 2011 American Megatrends, Inc.		

#### Enable ACPI Auto Configuration

Setting the advanced power management configuration, optional for Enalbed, Disbaled.

#### Enable Hibernation

Enables or disables system ability to hibernate (OS/S4 sleep state). This option may be not effective with some OS. Optional for Enalbed, Disbaled.

#### ACPI Sleep State

Select the highest ACPI sleep state the system will enter when the suspend button is pressed. Optional for Suspend Disbled, S1(CPU Stop Clock), S3(Suspend to RAM).

#### Lock legacy Resources

Enables or disables lock of legacy resources. optional for Enalbed, Disbaled.

• Press < Esc> key to return to "Advanced" menu.

#### RTC Wake Settings

Click <Enter> key to enter its submenu.

Aptio Setup Utility - Copyright (C) 2011 Ame Advanced	erican Megatrends,Inc.
Wake System With Fixed Time [Disabled] Wake system with Dynamic Time [Disabled]	Enable or Disabe System wake on alarm event. When enabled,System will wake on the Hr::min::sec specified. → +: Select Screen ↑ ↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F7: Previous Values F8: Fail-Safe Values F9: Optimized Defaults F10: Save & Exit ESC: Exit
Version 2.11.1210. Copyright (C) 2011 Amer:	ican Megatrends, Inc.

#### • Wake System With Fixed Time

Enable or Disabe System wake on alarm event. When enabled, System will wake on the Hr::min::sec specified.

#### • Wake system with Dynamic Time

Enable or disable system wake on alarm event. When enabled, system will wake on the current time + Increase minute(s).

• Press <**Esc**> key to return to "**Advanced**" menu.

#### CPU Configuration

Click <Enter> key to enter its submenu.

Aptio Setup Utility - Copyrig Advanced	μht (C) 2011 Am	erican Megatrends,Inc.
Intel(R) Core(TM) i7-2600 CPU @ EMT64 Max Processor Speed Min Processor Speed Processor Speed Factory power limit Processor Stepping Mcrocode Revision Processor Code Intel HT Technology	3.40 GHz Supported 3400MHz 1600MHz 3400MHz 95 Watts 206a6 28 4 Supported	Non Turbo Range: 16 - 34. Turbo ratio: 35. If out of range ratio, maximum or minimum ration is used. This sets the maximum ratio.
Max Freq Ratio Set Boot Freq Ratio Hyper-threading Active Processor Cores Limit CPUID Maxinum Execute Disble Bit Hardware Prefetcher Adjacent Cache Line Prefetch Intel Virtualization Technology CPU C3 Report CPU C6 Report Package C State limit Local x2APIC	255 255 [Enabled] [All] [Disabled] [Enabled] [Enabled] [Disabled] [Disabled] [Disabled] [Disabled] [Disabled]	<pre>→ +: Select Screen ↑ ↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F7: Previous Values F8: Fail-Safe Values F8: Fail-Safe Values F9: Optimized Defaults F10: Save &amp; Exit ESC: Exit</pre>

#### Version 2.11.1210. Copyright (C) 2011 American Megatrends, Inc.

This is CPU configuration options, and show processor working states, such as frequency <sup>,</sup> 64-bit support, maximum/min frequency, stepping, microcode version, code number and hyper-threading technology support, etc.

#### Max Freq Ratio

This sets the maximum ratio.

Set Boot Freq Ratio

This sets the boot ratio.

Hyper-threading

Setting hyper-threading technology open or closed.

#### Active Processor Cores

Setting processor core number.

#### Limit CPUID Maxinum

When set to [Enabled], this item limits the CPUID maximum value to 3, which is usually required for older OS like Windows NT4.0.

#### Execute Disble Bit

This item appears only for certain processors with the Execute Disable Bit (XD bit) feature. When set to [Enabled], this item allows the processor to prevent data pages from being used by malicious software to execute code and provide memory protection.

#### Hardware Prefetcher

To turn on/off the Mid Level Cache (L2) streamer prefetcher.

#### Adjacent Cache Line Prefetch

Setting to turn of/off prefectching of adjcent cache lines.

#### Intel Virtualization Technology

When enabled, a VMM can utilize the additional hardware capabilities provided by Vanderpool Technology.

#### CPU C3 Report

Setting CPU C3(ACPI C2) report to OS.

#### CPU C6 Report

Setting CPU C6(ACPI C3) report to OS.

#### Package C State limit

Setting of CPU C energy-saving depth.

Local x2APIC

This item enables Local x2APIC. Some OSes do not support this feature.

#### Press <Esc> key to return to "Advanced" menu.

► USB Configuration

Click <Enter> key to enter its submenu.

Aptio Setup Utility - Copyrig	ht (C) 2011 Am	erican Megatrends,Inc.
Advanced USB Configuration USB Devices 2 Hubs Legacy USB Support EHCI Hand-off Port 60/64 Emulation USB hardware delays and time-outs USB transfer time-out Device reset time-out Device power-up delay	[20 sec] [20 sec] [Auto]	Enables Legacy USB Support. AUTO option disables legacy support if no USB devices are connected. DISABLE option will keep USB devices available only for EFI applications.
Version 2.11.1210. Copyright	(C) 2011 Amer	ican Megatrends, Inc.

#### Legacy USB Support

Setting support old input/output devices, such as the mouse, keyboard etc.

#### • EHCI Hand-off

Setting EHCI Hand-Off function.

#### Port 60/64 Emulation

The item is to increase the USB KBC compatibility.

#### USB transfer time-out

The time-out value for CONTROL, Bulk, and Interrupt transfers.

#### Device reset time-out

USB mass storage device Start Unit command time-out.

#### Device power-up delay

Maximum time the device will take before it properly reports itself to the Host Controller.

• Press < Esc> key to return to "Advanced" menu.

#### Power Management

Click <Enter> key to enter its submenu.

Aptio Setup Utility -	Copyright (C) 2011 American	Megatrends, Inc.
Advanced		
Power Management	Power	On By PS/2 Keyboard
AC Power Loss	↑ ↓ : Enter: +/-: F1: Ge F7: Pr F8: Fa F9: Op	Select Screen Select Item Select Change Opt. eneral Help revious Values ail-Safe Values ptimized Defaults Save & Exit Exit
Version 2.11.1210. 0	opyright (C) 2011 American Me	gatrends, Inc.

#### AC Power Loss

Setting the system state choice after powre failure. Setting "Power Off", need to press case panel on the Power switch to boot. Setting "Power On", the supply reply directly boot. Setting "Last State", Power reply recovery system State before power off. The default value as "Power Off".

• Press <**Esc**> key to return to "**Advanced**" menu.

#### ► H/W Monitor

Click <Enter> key to enter its submenu, it will be display hardware health configuration, including System temperature, CPU temperature, FAN speed and all kinds of voltages.

Aptio Setup Utility - Copyr Advanced	ight (C) 2011 Am	erican Megatrends,Inc.
PC Health Status		Smpart Fan Configuration
CPU temperature SYS temperature	: +45 ℃ : +30 ℃	→ ←: Select Screen
CFAN1 Speed SFAN1 Speed	: 2276 RPM : N/A	↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help
CPU Voltage DIMM Voltage	: +1.192 V : +1.512 V	F7: Previous Values F8: Fail-Safe Values F9: Optimized Defaults
VTT Voltage PCH Voltage VBAT Voltage	: +1.040 V : +1.024 V : +3.264 V	F10: Šave & Exit ESC: Exit
Smart Fan Configuration Fan PWM Value	[Manual Mode] 255	
Version 2.11.1210. Copyrig	ht (C) 2011 Amer	ican Megatrends, Inc.

#### Smart Fan Configuration

Allows you to determine whether to enable the CPU fan speed control function and adjust the fan speed. Available options: Manual Mode, Smart Mode

#### • Fan PWM Value

Available options: 0 - 255

#### 3.5.3 Chipset Setting

	- Copyright (C) 2011 Am Boot Security OverClock	
<ul> <li>North Bridge</li> <li>SB Devices Control</li> <li>Intel IGD OpRegion</li> <li>ME Subsystem</li> </ul>		North Bridge Parameters → ←: Select Scree ↑ ↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F7: Previous Values F8: Fail-Safe Values F9: Optimized Defaults F10: Save & Exit ESC: Exit
Version 2.11.1210.	Copuright (C) 2011 Amer	ican Megatrends, Inc.

#### ► North Bridge

Click <Enter> key to enter its submenu

Aptio Setup Utility — Copyright (C) 2011 American Megatrends,Inc.		
Chipset		
Memory Information		Low MMIIO resources align
Toltal Memory	1024 MB (DDR3 1333)	at 64MB/1024MB
Memory Slot1	1024 MB (DDR3 1333)	→ ← : Select Scree
Memory Slot2	0 MB (DDR3 1333)	↑↓: Select Item Enter: Select
Low MMIO Align	[1024M]	+/-: Change Opt.
DMI Gen2	[Enabled]	F1: General Help
VT-d	[Disabled]	F7: Previous Values F8: Fail-Safe Values
Initate Graphic Adapter	[PEG/IGD]	F9: Optimized Defaults
IGD Memory	[96M]	F10: Save & Exit
Render Standby	[Enabled]	ESC: Exit
IGD Multi-Monitor	[Disabled]	
Version 2.11.1210. Copyright (C) 2011 American Megatrends, Inc.		

#### Low MMIO Align

Low MMIIO resources align at 64MB/1024MB.

#### DMI Gen2

DMI Gen2 Enabled/Disabled.

#### • VT-d

Available options: Enabled, Disabled

#### Initate Graphic Adapter

Select which graphics controller to use as the primary boot device.

#### IGD Memory

IGD share memory size.

#### Render Standby

Enable/Disable Render Standby by Internal Graphics Device.

#### • IGD Multi-Monitor

Enable/Disable IGD Multi-Monitor by Internal Graphics Device.

• Press < Esc> key to return to "Chipset" menu.

#### SB Devices Control

Click <Enter> key to enter its submenu.

Aptio Setup Utility - C Chipset	Copyright (C) 2011 Ame	erican Megatrends,Inc.
SB Chipset Configuration Onboard LAN Controller		Enabled/Disabled the PCI Express Ports in the Chipset.
Onboard LAN Controller Audio Configuration Azalia HD Audio Azalia internal HDMI codec	[Enabled] [Enabled] [Enabled]	<pre>→ +: Select Scree ↑ ↓: Select Item Enter: Select +/-: Change Opt. F1: General Help</pre>
USB Configuration USB2.0 Controller > SATA Control	[Enabled]	F7: Previous Values F8: Fail-Safe Values F9: Optimized Defaults F10: Save & Exit ESC: Exit

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#### Onboard LAN Controller

This option allows you whether enable the onboard LAN.

#### Azalia HD Audio

Sets the HD Audio has Enabled or Disabled state.

#### Azalia internal HDMI codec

Enabled/Disabled internal HDMI codec for Azalia.

#### USB2.0 Controller

Enabled/Disabled All USB Devices.

#### SATA Control

Click <Enter> key to enter its submenu.

Aptio Setup Utility - <mark>Chipset</mark>	· Copyright (C) 2011 Ame	erican Megatrends,Inc.
SATA Controller SATA Mode	[IDE Mode]	<ul><li>(1) IDE Mode.</li><li>(2) AHCI Mode.</li><li>(3) RAID Mode.</li></ul>
	[Compatible] [Enhanced]	<pre>→ ←: Select Scree ↑ ↓: Select Item Enter: Select</pre>
SATA Port1 SATA Port2	Hitachi HCP725 (320. Not Present	+/-: Change Opt. F1: General Help F7: Previous Values
SATA Port3	Not Present	F8: Fail-Safe Values F9: Optimized Defaults
SATA Port4	Not Present	F10: Save & Exit ESC: Exit

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#### EMX-H61 User's Manual

#### SATA Mode

This item allows users to enable or disable the SATA controller.

- Serial-ATA Controller 0
- Available options: Disabled, Enhanced, Compatible
- Serial-ATA Controller 1
- Available options: Disabled, Enhanced, Compatible

#### • SATA Port 1 /2/3/4

Display SATA devices.

• Press < Esc> key to return to "Chipset" menu.

#### Intel IGD OpRegion

Click <Enter> key to enter its submenu.

Aptio Setup Utility - Copyright (C) 2011 American Megatrends,Inc. Chipset		
Intel IGD SWSCI OpRegion	Configuration	Select DVMT Mode and by Internal Graphics Device
DVMT Mode Select DVMT/FIXED Memory	EDVMT Model E256MB1	→ ←: Select Scree
llengion 2 11 1210	Conunight (C) 2011 Amen	

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#### DVMT Mode Select

Select DVMT Mode used by Internal Graphics Device.

#### DVMT/FIXED Memory

Select DVMT/FIXED Mode Memory size used by Internal Graphics Device.

• Press <Esc> key to return to "Chipset" menu.

#### ME Subsystem

Click <Enter> key to enter its submenu.

Aptio Setup Utility - Copyright (C) 2011 American Megatrends,Inc. Chipset		
Intel ME Subsystem Configura ME Version	ation 7.0.4.1197	ME Subsystem Help
ME Subsystem ME Temporary Disable End of Post Message	[Enabled] [Diablsed] [Enabled]	<pre>→ ←: Select Scree ↑ ↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F7: Previous Values</pre>
Version 2.11.1210. Copyright (C) 2011 American Megatrends, Inc.		

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#### EMX-H61 User's Manual

• ME Temporary Disable

Available options: Disabled, Enabled

Available options: Disabled, Enabled

ME Subsystem

• End of Post Message			
Available options: Disabled, Enabled			
3.5.4 Boot Setting			
Aptio Setup Utility — Copyright (C) 2011 American Megatrends,Inc.			
Main Advanced Chipset <mark>Boot</mark> S	ecurity OverClock	: Save & Exit	
Bootup NumLock State Full Screen Logo Option ROM Messages Interrupt 19 Capture Boot Option Priorities	[On] [Enable] [Force BIOS] [Disabled] [SATA: Hitach]	Number of seconds to wait for setup activation key. 65535(0×FFFF) means indefinite waiting. → +: Select Scree † ↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F7: Previous Values F8: Fail-Safe Values F8: Fail-Safe Values F9: Optimized Defaults F10: Save & Exit ESC: Exit	
Version 2.11.1210. Copyright (C) 2011 American Megatrends, Inc.			

#### Setup Prompt Timeout

Number of seconds to wait for setup activation key.

#### Bootup NumLock State

Allows you to select the power-on state for the NumLock.

#### Full Screen Logo

This item determines to show the full screen logo when booting.

#### Option ROM Messages

Set display mode for option ROM.

#### Interrupt 19 Capture

When set to Enabled, this function allows the option ROMs to trap Interrupt 19.

#### Boot Option #1

Sets the system boot order.

#### Hard Drive BBS Priorities

Click <Enter> key to enter its submenu, it will be display specifies the boot sequence from the available devices.

30 EMX-H61 User's Manual

#### 3.5.5 Security Setting

Aptio Setup Utility - Copyright (C) 2011 Ame Main Advanced Chipset Boot <mark>Security</mark> OverClock	
Password Description If ONLY the Administrator'password is set,	Set Setup Administrator Password.
then this only limits access to Setup and is only asked for when entering Setup. If ONLY the User's password is set, then this isa power on password and must be entered to boot or enter Setup. In Setup the User will have Admimistrator rights. The password must be 3 to 20 characters long.	<pre>→ +: Select Scree ↑ ↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F7: Previous Values F8: Fail-Safe Values F9: Optimized Defaults F10: Save &amp; Exit</pre>
Administrator Password User Password	ESC: Exit

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#### Administrator Password

This option is used to set an administrator password, as the following steps:

- 1. Move the cursor to the Administrator Password item, press < Enter>.
- 2. In the "Create New Password" dialog box, enter 3 to 20 characters or numbers to be setted, press <Enter>, and enter again in the "Confirm Password" dialog box to confirm the password is correct. If the prompt "Invalid Password!", entering the password does not match, please enter it again.

To clear the system administrator password, select "Administrator Password", in "Enter Current Password" dialog box enter the old password, and in the "Create New Password "<Enter>, password is cleared.

#### User Password

The option be used to set the user password, setting steps is same with "Administrator Password" Setting way.

**Note**: Don't forget your password. If you forget the password, you will have to open the computer case and clear all information in the CMOS before you can start up the system. But by doing this, you will have to reset all previously set options.

#### 3.5.6 OverClock Setting

Aptio Setup Utility - Copyright (C) 2011 Ame Main Advanced Chipset Boot Security OverClock		
Over Clock Configuration > CPU Configuration > Memory Configuration > Graphics Configuration > OC Voltage Control	Number of seconds to wait for setup activation key. 65535(0xFFFF) means indefinite waiting. + +: Select Scree t +: Select Item Enter: Select t/-: Change Opt. F1: General Help F7: Previous Values F8: Fail-Safe Values F8: Fail-Safe Values F9: Optimized Defaults F10: Save & Exit ESC: Exit	
Version 2.11.1210. Copyright (C) 2011 American Megatrends, Inc.		

#### ► CPU Configuration

Click <Enter> key to enter its submenu.The following items: setting CPU Multiplier, CPU power consumption limit, power consumption limit, overclocking switch.

Aptio Setup Utility – Copyright	: (C) 2011 Am OverCloc	
Non Turbo Ratio Override Enhanced Intel SpeedStep Technology Turbo Mode	34 [Enabled] [Enabled]	Non Turbo Ratio Override → ←: Select Scree ESC: Exit
Version 2.11.1210. Copyright (C) 2011 American Megatrends, Inc.		

#### Memory Configuration

Click <Enter> key to enter its submenu.The following items: Setting FSB and memory parameters act.

Aptio Setup Utility - Copyright (C) 2011 American Megatrends,Inc. OverClock		
Memory Multiplier Configuration		Memory Multiplier
Memory Multiplier	[1333MHz]	<pre>→ +: Select Scree ↑ ↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F7: Previous Values F8: Fail-Safe Values F9: Optimized Defaults F10: Save &amp; Exit ESC: Exit</pre>
Version 2.11.1210. Copyright (	C) 2011 Amer:	ican Megatrends, Inc.

#### ► Graphics Configuration

Click <Enter> key to enter its submenu. The following items: setting graphics core ratio limit, graphics voltage, iGFX core current max.

Aptio Setup Utility - Copyright (C) 2011 American Megatrends,Inc. OverClock		
Intel Graphics Configuration Graphics Core Ratio Limit Graphics Voltage(1/10000) iGFX Core Current Max(1/9 Amp)	27 0 260	Graphics Core Ratio Limit → +: Select Scree ↑ ↓: Select Item Enter: Select 

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#### OC Voltage Control

Click <Enter> key to enter its submenu. The following items: Setting the memory voltage.

Over	•Clock
Platform Voltage Control	Graphics Core Ratio Limit
Memory Voltage [1.5000]	
	<pre>→ +: Select Scree ↑ ↓: Select Item Enter: Select +/-: Change Opt.</pre>
Version 2.11.1210, Comunimit (C) 2011	•••••

#### 3.5.7 Save & Exit Setting

Aptio Setup Utility - Copyright (C) 2011 Ame Main Advanced Chipset Boot Security OverClock	
Save Changes and Exit Discard Changes and Exit Save Changes and Reset Discard Changes and Reset	Exit system setup after saving the changes.
Save Options Save Changes Discard Changes Restore Defaults Save as User Defaults Restore User Defaults	<pre>→ +: Select Scree ↑ ↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F7: Previous Values F8: Fail-Safe Values E9: Content Defendate</pre>
Boot Override SATA: Hitachi HCP725032GLA380	F9: Optimized Defaults F10: Save & Exit ESC: Exit

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#### Save Changes and Exit

Select "Save Changes and Exit", and press the Enter key, and select "Yes" button, so save all settings the results to the CMOS RAM and exit BIOS setup program. If not stored, then select "No" or Press "ESC" key and return to the "Save & Exit" menu.

#### Discard Changes and Exit

Select "Discard changes and exit", select "Yes" and press <Enter> to give up on BIOS program changes and exit BIOS setup program. Select "No" or press "ESC" and return to the main menu.

#### Save Changes and Reset

Select "Save Changes and Reset", and select "Yes" and press <Enter> to save the 34 EMX-H61 User's Manual

#### EMX-H61 User's Manual

changes made to the BIOS and restart. Select "No" or press "ESC" and return to the main menu.

#### Discard Changes and Reset

Select "Discard Changes and Reset", select "Yes" and press <Enter> to give up to save the BIOS changes and restart. Select "No" or press "ESC" and return to the main menu.

#### Save Changes

Select "Save Changes", select "Yes" and press <Enter> to save the BIOS changes. Select "No" or press "ESC" key and return to the main menu.

#### Discard Changes

Select "Discard Changes", select "Yes" and press <Enter> to discard the BIOS changes. Select "No" or press "ESC" key and return to the main menu.

#### Restore Defaults

Select "Restore Defaults", select "Yes" and press <Enter> allows users to restore all the BIOS options to optimize the value, select "No" or press "ESC" and return to the main menu.

#### Save as User Defaults

Select "Save as User Defaults", select "Yes" and allows users to save personalized user settings BIOS default values, select "No" or press "ESC" return to the main menu.

#### Restore User Defaults

Select "Restore User Defaults", select "Yes" and press <Enter> allows the user to restore the user's personality BIOS settings, select "No" or press "ESC" and return to the main menu.



# 4.1 Install Chipset Driver (For Intel H61 Express)

Insert the Supporting DVD-ROM to DVD-ROM drive, and it should show the index page of Avalue's products automatically. If not, locate Index.htm and choose the product from the menu left, or link to **\Driver\_Chipset\Intel.** 



**Note:** The installation procedures and screen shots in this section are based on Windows XP operation system. If the warning message appears while the installation process, click Continue to go on.



**Step1.** Locate \[\Driver\_Chipset\Intel\] H61\ infinst\_autol.exe \].



Step 2. Click Next.



#### Step 3. Click Next.



Step 4. Click Finish to complete setup.

# 4.2 Install Display Driver (For Intel H61 Express)

Insert the Supporting DVD-ROM to DVD-ROM drive, and it should show the index page of Avalue's products automatically. If not, locate Index.htm and choose the product from the menu left, or link to **\VGA\H6s**.



**Note:** The installation procedures and screen shots in this section are based on Windows XP operation system.



**Step 1.** Locate 「Driver/VGA\H6s\win\_xp \setup.exe」.



Step 2. Click Next.



#### Step 3. Click Next.



#### Step 4. Click Yes.



Step 5. Click Finish to complete setup.

# 4.3 Install Audio Driver (For Realtek)

Insert the Supporting DVD-ROM to DVD-ROM drive, and it should show the index page of Avalue's products automatically. If not, locate Index.htm and choose the product from the menu left, or link to **\Driver\_Audio\Realtek HD.** 



Note: The installation procedures and screen shots in this section are based on Windows XP operation system.



Step 3. Select Next to the next step.



**Step 1.** Locate \[\Driver\Audio\Realtek HD\XP\setup.exe ] .



**Step 2.** The program executes the Setup automatically.



Step 4. Click Finish to complete the setup.

# 4.4 Install Ethernet Driver (For Realtek PCIE)

Insert the Supporting CD-ROM to CD-ROM drive, and it should show the index page of Avalue's products automatically. If not, locate Index.htm and choose the product from the menu left, or link to \Driver\_Network\Broadcom.



**Note:** The installation procedures and screen shots in this section are based on Windows XP operation system.



**Step 1.** Locate 「\Driver\LAN\Realtek PCIE\XP\setup.exe」.



Step 2. Setup executing.



Step 3. Click Finish to complete the setup.

# 4.5 Install USB3.0 Driver (For USB3)

Insert the Supporting CD-ROM to CD-ROM drive, and it should show the index page of Avalue's products automatically. If not, locate Index.htm and choose the product from the menu left, or link to \Utility\USB3.



**Note:** The installation procedures and screen shots in this section are based on Windows XP operation system.



NEC Electronics USB 3.0 Host Controller Driver - InstallShield Wizard
InstallShield Wizard Complete
The InstallShield Wizard has successfully installed NEC
Electronics USB 3.0 Host Controller Driver. Click Finish to exit
the wizard.

Step 3. Click Finish to complete the setup.

**Step 1.** Locate 「\ Driver\ USB3\NEC\ setup.exe」.



Step 2. Setup executing.