ID70 Motherboard

Mini-ITX Fanless SBC w/Intel Atom D2550 1.86GHz Processor, VGA, LVDS, Dual Giga Ethernet, PCI and Mini-PCIe Interface.

User Manual / Engineering Spec.

Version 1.2





FCC Statement



This device complies with part 15 FCC rules. Operation is subject to the following two conditions :

This device may not cause harmful interference.

• 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 him own expense.

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We warrant that each of its products will be free from material and workmanship defects for a period of one year from the invoice date. If the customer discovers a defect, We will, at its option, repair or replace the defective product at no charge to the customer, provided it is returned during the warranty period of one year, with transportation charges prepaid. The returned product must be properly packaged in its original packaging to obtain warranty service.

If the serial number and the product shipping data differ by over 30 days, the inwarranty service will be made according to the shipping date. In the serial numbers the third and fourth two digits give the year of manufacture, and the fifth digit means the month (e. g., with A for October, B for November and C for December).

For example, the serial number 1W11Axxxxxxx means October of year 2011.



Packing List

Before using this Motherboard, please make sure that all the items listed below are present in your package :

- ID70 Motherboard
- User Manual
- HDD SATA Cable
- User's Manual & Driver CD

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

Customer Service

We provide service guide for any problem as follow steps : The first, contact with your distributor, sales representative, or our customer service center for technical support if you need additional assistance. You may have the following information ready before you call :

- Product serial number
- Peripheral attachments
- Software (OS, version, application software, etc.)
- Description of complete problem
- > The exact wording of any error messages

In addition, free technical support is available from our engineers every business day. We are always ready to give advice on application requirements or specific information on the installation and operation of any of our products. Please do not hesitate to call or e-mail us.



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 electronic 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.



Safety and Warranty

- 1. Please read these safety instructions carefully.
- 2. Please keep this user's manual for later reference.
- 3. Please disconnect this equipment from any AC outlet before cleaning. Do not use liquid or spray detergents for cleaning. Use a damp cloth.
- 4. For pluggable equipment, the power outlet must be installed near the equipment and must be easily accessible.
- 5. Keep this equipment away from humidity.
- 6. Put this equipment on a reliable surface during installation. Dropping it or letting it fall could cause damage.
- 7. The openings on the enclosure are for air convection. Protect the equipment from overheating. DO NOT COVER THE OPENINGS.
- 8. Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.
- 9. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
- 10. All cautions and warnings on the equipment should be noted.
- 11. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient over-voltage.
- 12. Never pour any liquid into an opening. This could cause fire or electrical shock.
- 13. Never open the equipment. For safety reasons, only qualified service personnel should open the equipment.
- 14. If any of the following situations arises, get the equipment checked by service personnel:
 - A. The power cord or plug is damaged.
 - B. Liquid has penetrated into the equipment.
 - C. The equipment has been exposed to moisture.
 - D. The equipment does not work well, or you cannot get it to work according to the user's manual.
 - E. The equipment has been dropped and damaged.
 - F. The equipment has obvious signs of breakage.
- 15. Do not leave this equipment in an uncontrolled environment where the storage temperature is below -20° C (-4° F) or above 60° C (140° F). It may damage the equipment.



Revision History

Version	Date Note		Author
1.0	2012.1.13	Initial Draft	Henry Hsu
1.1	2014.7.18	Revise Panel1 Pin Define	Jimmy Chen
1.2	2015.5.08	Revise content	Tom Huang

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General Information **1**

This chapter includes the ID30 Motherboard background information.

Sections include:

- Introduction
- Feature
- Motherboard Specification
- Function Block
- Board Dimensions

Chapter 1 General Information

1.1 Introduction

The ID70 SBC is integrated with Intel[®] NM10 express chipset, 17x17mm, and Atom D2550 Processor. Intel Atom Processor with 32nm low power design enables down to 50% less average power consumption and the chipset delivers up to 4x improvement in graphics performance and enables up to 50% higher data transfer bus speed rate.

In peripheral connectivity, ID70 SBC features with two Mini-PCIe I/O ports, one PCI slot, two Serial ATA connectors, six Serial Port (Three Connector; Three Pin Header) and Eight Hi-Speed USB 2.0 connectors(Four Connector; Four Pin Header) .Additionally, ID70 SBC build-in a 12V DC-IN power adapter.

Thus, the ID70 SBC is designed to satisfy most of the applications in the industrial computer market, such as Gaming, POS, KIOSK, Industrial Automation, and Programmable Control System. It is a compact design to meet the demanding performance requirements of today's business and industrial applications.

1.2 Feature

- Mini-ITX Form Factor (170mm x 170mm)
- Supports Intel[®] Atom D2550 1.86GHz processor
- System memory up to 4GB DDR3 800/1066, SO-DIMM
- ➢ Intel NM10 Chipset
- ▶ Intel[®] Graphic Accelerator 3650 Integrated Graphics Engine.
- Dual Broadcom BCM57780 GbE controller
- 1 x PCI, 2 x Mini PCIe, 6 x COM, 8 x USB2.0, 2 x SATA, 8 x GPIO ports, 1 x DVI, 1 x LPT port



1.3 Motherboard Specifications

CPU Type	Intel Atom Dual Core D2550 1.86GHz Processor
CPU Speed	1.86GHz
Chipset	Intel NM10
BIOS	AMI 16Mbit Flash
Graphic	Intel® Graphic Accelerator 3650 support DX10, OGL2.0
LCD interface	Single-channel 24 bit LVDS Up to 1440 x 900 @ 60Hz
Resolution	VGA mode : Up to 1920 x 1200 @ 60Hz DVI : 1920 x 1200 @ 60Hz
LAN	2 x Giga LAN (Broadcom BCM57780 GbE controller)
Memory Type	2 x SO-DIMM socket, supports up to 4GB DDR3 800/1066
Super I/O	Fintek F81865
Sound	Realtek ALC886 HD Audio Codec
USB	8 ports, USB 2.0 (4 x USB Connector, 4 x USB pin-header)
Edge Connectors	1 x DC-IN Jack (+12V) 1 x VGA out connector 2 x Gigabit LAN RJ-45 1 x RS232/422/485 2 x RS232 4 x USB connector 2 x PS2 1 x Audio Jack(Line in, Line out, Mic in)
On Board Pin-Header Connectors	2 x SATA connector for SATAI/II 3.0 Gb/s 1 x 10pins pin-header for Front Panel(2x5) 1 x 8pins pin-header for 5V/12V external power 1 x 3pins pin-header for CPU Fan 1 x 3pins pin-header for System Fan 2 x 2pins pin-header for 5V external power 1 x 2pins pin-header for 12V external power 2 x 8pins pin-header for USB (2X4) 1 x 10pins Digital I/O(2x5) 1 x 20pins pin-header for COM 5.6(RS232) (2X10) 1 x 10pins pin-header for COM2 (2X5) 1 x 4-pin Power-input connector 1 x 20pins Connector for LVDS 1 x 20pins Connector for DVI 1 x 3pins digital panel backlight brightness controller 1 x 7pins digital panel inverter 2 x 2pins pin-header for Speaker 1 x 20pins pin-header for LPT port(2X10)
Power Connector	Input: 4-pin Power-input connector
Expansion Slots	2 x Mini PCIe slot 1 x PCI slot
Form Factor	Mini-ITX
Dimensions	170mm x 170mm
Mechanical & environmental	Operating temperature: 0 deg. C to 60 deg. C Operating Humidity: 10 ~ 90% Relative humidity, non-condensing Shock: Operating 15G, 11ms duration Vibration: Operating 5 Hz~500Hz / 1Grms / 3 Axis Certification: CE, FCC, RoHS



Function Block



4



Board dimensions









Installations

This chapter provides information on how to use the jumps and connectors on the ID70 Motherboard. The Sections include:

- Memory Module Installation
- I / O Equipment Installation
- Setting the Jumpers
- Connectors on ID70 Motherboard

Chapter 2 Installations

2.1 Memory Module (SO-DIMM) Installation

The ID70 Motherboard provides one 204-pin SODIMM slot. The socket supports up to 4GB DDR3 800/1066 SDRAM. When installing the Memory device, please follow the steps below :

Step.1. Firmly insert the SO-DIMM at an angle into its slot. Align the SO-DIMM on the slot such that the notch on the SO-DIMM matches the break on the slot.

Step.2. Press downwards on SO-DIMM until the retaining clips at both ends fully snap back in place and the SO-DIMM is properly seated.



Caution!



The SO-DIMM only fits in one correct orientation. It will cause permanent damage to the development board and the SO-DIMM if the SO-DIMM is forced into the slot at the incorrect orientation.



2.2 I/O Equipment Installation

2.2.1 12V DC-IN

The Motherboard allows plugging 12V DC-IN jack on the board without another power module converter under power consumption by Intel Atom D2550 1.86GHz Processor in NM10 chipset.

<u>Without power/reset OSD, you can short circuit pin5 & 6 of the onboard panel</u> <u>connector to boot up the motherboard.</u>

2.2.2 Serial COM ports

Three RS-232 connectors build in the rear I/O. One optional COM ports support RS-422/485. When an optional touch-screen is ordered with PPC, serial com port can connect to a serial or an optional touch-screen.

2.2.3 External VGA

The Motherboard has one VGA port that can be connected to an external CRT/ LCD monitor. Use VGA cable to connect to an external CRT / LCD monitor, and connect the power cable to the outlet. The VGA connector is a standard 15-pin D-SUB connector.

2.2.4 Ethernet interface

The Motherboard is equipped with Broadcom BCM57780 chipset which is fully compliant with the PCI 10/100/1000 Mbps Ethernet protocol compatible. It is supported by major network operating systems. The Ethernet ports provide two standard RJ-45 jacks.

2.2.5 USB ports

Eight USB devices (Four with pin headers) may be connected to the system though an adapter cable. Various adapters may come with USB ports. USB usually connect the external system to the system. The USB ports support hot plug-in connection. Whatever, you should install the device driver before you use the device.

2.2.6 Audio function

The Audio 7.1 channel capabilities are provided by a Realtek ALC886 chipset supporting digital audio outputs. The audio interface includes three jacks: line-in, line-out and mic in.



2.3 Jumpers and Connectors





BOTTOM





2.4 Jumper Setting

A pair of needle-nose pliers may be helpful when working with jumpers. If you have any doubts about the best hardware configuration for your application, contact your local distributor or sales representative before you make any changes. Generally, you simply need a standard cable to make most connections.

The jumper setting diagram is as below. If a jumper shorts pin 1 and pin 2, the setting diagram is shown as the right one.



The following tables list the function of each of the board's jumpers.

Label	Function	Note
JP1	RS232 / RS422 / RS485 Selector	3x4 header , pitch 2.0mm
JP2	RS232 / RS422 / RS485 Selector	2x3 header , pitch 2.0mm
JP3	LVDS PWR Selector	2x3 header , pitch 2.5mm
JP4	Back Light PWR	3x1 header , pitch 2.5mm
JP5	Clear CMOS	3x1 header , pitch 2.5mm
JP6	PWM Level	3x1 header , pitch 2.0mm
JP7	PWM/DA	3x1 header , pitch 2.0mm
JP8	VR/Software	3x1 header , pitch 2.0mm

2.4.1 JP1: RS232 / RS422 / RS485 Selector for CON port

RS232					RS	422/	485		
1	0	0	0	3	1	0	0	0	3
4	0	0	0	6	4	0	0	0	6
7	0	0	0	9	7	0	0	0	9
10	0	0	0	12	10	0	0	0	12

RS232	RS422/485
1-2	2-3
4-5	5-6
7-8	8-9
10-11	11-12

2.4.2 JP2 : RS232 / RS422 / RS485 Selector for CON port



2.4.3 JP3 : LCD Panel Voltage Select

	3.31	/olts	<u>.</u>	2	5V	olts			12	/olts	
1	0	•	2	1	0	0	2	1	0	0	2
3	0	0	4	3	0	0	4	3	0	0	4
5	0	0	6	5	0	0	6	5	0	0	6

Pin No.	Functions
1 Short 2	3.3Volts Selected
2 Short 3	5Volts Selected
5 Short 6	12Volts Selected

2.4.4 JP4 : Back Light PWR



Pin No. Functions 1 Short 2 +5V 2 Short 3 +12V

2.4.5 JP5 : Clear CMOS



Pin No.	Functions
1 Short 2	Clear CMOS
2 Short 3	Normal

2.4.6 JP6 : PWM Level



Pin No.	Functions
1 Short 2	+3.3V
2 Short 3	+5V

2.4.7 JP7 : Brightness Control(DC/PWM)



Pin No.	Functions
1 Short 2	DC(VR)
2 Short 3	PWM

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2.4.8 JP8 : Brightness Control(VR/Software)



Pin No.	Functions
1 Short 2	VR Control
2 Short 3	Software



2.5 Connectors and Pin Assignment

The table below lists the function of each of the board's connectors.

Label	Function	Note
LVDS	LVDS LCD Output Connector	2x10 Pin, 1.25mm
CN16	Digital Panel Backlight Brightness Control	3x1 header, pitch 2.54mm
CN19	Digital Panel Backlight Inverter Power	7x1 header, pitch 2.54mm
COM2	COM2 for RS232	2x5 header
COM5 \ 6	COM5 5 6 for RS232	2x10 header
USB	USB PIN HEADER	4x2 Pin Header
CPU_FAN	CPU Fan CONNECTOR	3x1 Pin Header
SYS FAN	System Fan Connector	3x1 Pin Header
PANEL1	System Function Connector	5x2 header ,pitch 2.0mm
DVI	DVI Output Connector	2x10 Pin, 1.25mm
12V	12V External Power	2x1 header, pitch 2.0mm
5V	5V External Power	2x1 header, pitch 2.0mm
HDD PWR	12V/5V External Power	4x2 header ,pitch 2.54mm
DC JACK	12V DC Jack	4 Pin Jack
DIO	Digital I/O	2x5 Pin header
SPK	Speaker(Right/Left)	2 Pin header
LPT	Printer Port	2x10 header
2 x Mini PCle	Mini PCIe for WLAN, 3G module	Mini PCIe slot

* Not Default Connector

2.5.1 LVDS: LVDS Connector



Pin No.	SYMBOL	Pin No.	SYMBOL
1	GND	2	LVDS_TX0_DN
3	GND	4	LVDS_TX0_DP
5	GND	6	LVDS_TX1_DN
7	GND	8	LVDS_TX1_DP
9	GND	10	LVDS_TX2_DN
11	N/C	12	LVDS_TX2_DP
13	LCDVDD	14	LVDS_CLK_DN
15	LCDVDD	16	LVDS_CLK_DP
17	NC	18	LVDS_TX3_DN
19	LCDVDD	20	LVDS_TX3_DP

2.5.2 CN16: Digital Panel Backlight Brightness Control

1	Pin No.	SYMBOL
	1	5V/12V
7	2	Black Light Control
	3	GND

1

2.5.3 CN19: Inverter Power

	Pin No.	SYMBOL
	1	+12V
	2	+12V
	3	+12V
0	4	GND
l 🖸 n	5	Black Light Control
0	6	GND
1 ăl	7	Black Light EN 5V

2.5.4 COM5 • 6: Dual Output

The serial port COM5 \sim 6, which is RS232 only , is the Fintek I/O serial port.

10x2 header, pitch 2.0mm

1

	Pin No.	SYMBOL	Pin No.	SYMBOL
	20	GND	19	GND
(17)	18	FK NRI6	17	FK NDTR6
õ.	16	FK NCTS6	15	FK NSOUT6
õI.	14	FK NRTS6	13	FK NSIN6
	12	FK NDSR6	11	FK NDCD6
Ē	10	GND	9	GND
()	8	FK NRI5	7	FK NDTR5
Οn	6	FK NCTS5	5	FK NSOUT5
(5)	4	FK NRTS5	3	FK NSIN5
٥II	2	FK NDSR5	1	FK NDCD5
\mathbb{X}				

2.5.5 USB : USB PIN HEADER



USB				
Pin	SYMBOL	Pin	SYMBOL	
2	USB 5V	1	USB 5V	
4	USB_P6-	3	USB_P7-	
6	USB_P6+	5	USB_P7+	
8	GND	7	GND	



2.5.6 CPU_FAN: FAN CONNECTOR



2.5.7 PANEL1: Front Panel System Function Connector

Without power/reset OSD, short circuit pin 5 and 6 together to boot up the motherboard.

2	Pin	SYMBOL	Pin	SYMBOL
4	2	HD LED+	1	PW LED+
6	4	HD_LED-	3	PW_LED-
8	6	GND	5	PW_BT1
10	8	RT_BT2	7	BRI+
	10	5VSB	9	BRI-

2.5.8 5V/12V/CN10: External Power





CN10

2.5.9 DIDO1: Digital I/O Connector



Pin	SYMBOL	Pin	SYMBOL
2	Vcc	1	GND
4	Out1	3	Out3
6	Out0	5	Out2
8	IN2	7	IN3
10	INO	9	IN1

2.5.10 J2/J3: Amplifier



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2.5.11 COM2: Serial port COM2

10	9	Pin	SYMBOL	Pin	SYMBOL
8 6		<u> 10 </u> 8	<u>GND</u> NRI1A	<u>9</u> 7	NDTR1A
4		6	NCTS1A	5	NTXD1A
2	0 0 0 1	4	<u>NRTS1A</u>	3	<u>NRXD1A</u>
		2	NDSR1A	1	NDCD1A

2.5.12 DVI1: DVI connector



Pin No.	SYMBOL	Pin No.	SYMBOL
1	GND	2	TMDSB_DATA0-
3	GND	4	TMDSB_DATA0+
5	DVIC_LVDS_DET	6	TMDSB_DATA1-
7	DVIC_BKLTEN	8	TMDSB_DATA1+
9	DVIC_VDDEN	10	TMDSB_DATA2-
11	DVI_HOT_DETECT	12	TMDSB_DATA2+
13	LCDVDD	14	TMDSB_BLK-
15	LCDVDD	16	TMDSB_BLK+
17	+V5S	18	DVI1_DDC_CLK_R
19	+V5S	20	DVI_DDC_DAT_R

2.5.13 Switch 1



Pin	Signal Name
1	OFF
2	OFF
3	PWM
4	DC



2.5.14 Switch 2



Pin	Signal Name
1	OFF
2	OFF
3	VR
4	OSD

2.5.15 Mini PCIe slot for WLAN

Pin Number	Signal Name	Pin Number	Signal Name
1	NC	2	+V3.3DX_SSD
3	NC	4	GND
5	NC	6	+V1.5S_SSD
7	NC	8	NC
9	GND	10	NC
11	NC	12	NC
13	NC	14	NC
15	GND	16	NC
17	NC	18	GND
19	NC	20	NC
21	GND	22	NC
23	SATA_RXP2	24	+V3.3DX_SSD
25	SATA_RXN2	26	GND
27	GND	28	+V1.5S_SSD
29	GND	30	NC
31	SATA_TXN2	32	NC
33	SATA_TXP2	34	GND
35	GND	36	NC
37	GND	38	NC
39	+V3.3DX_SSD	40	GND
41	+V3.3DX_SSD	42	NC
43	GND	44	SATA2_DEVSLP
45	NC	46	NC
47	NC	48	+V1.5S_SSD
49	SSD_LED#	50	GND
51	+V3.3DX_SSD	52	+V3.3DX_SSD
M1	GND	M1	GND
M2	GND	M2	GND

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Graphic Driver Installation

This chapter offers information on the chipset software Installation utility

- Installation of Graphic Driver
- Panel Resolution Setting

Chapter 3 Graphic Driver Installation

3.1 Standard CMOS Feature

ID30 Motherboard is equipped with Intel NM10 Companion Device. The Intel Graphic Drivers should be installed first, and it will enable "Video Controller (VGA compatible). Follow the instructions below to complete the installation. You will quickly complete the installation.

Step.1. Insert the CD that comes with the Motherboard. Open the file document "Graphic Driver ".



Step.2. Click on "setup" to execute the setup.

Name		Date modified	Туре	Size
Graphics HDMI		12/27/2011 5:26 PM	File folder	
		12/27/2011 5:26 PM	File folder	
📕 ICC		12/27/2011 5:26 PM	File folder	
🔒 Lang 🔊 autorun		12/27/2011 5:26 PM	File folder	
		12/30/2008 3:31 PM	Setup Information	1 KB
MIFxAPI.dll		11/2/2006 7:21 AM	Application extens	312 KB
Installation_Re	adme	12/20/2011 10:37	Text Document	30 KB
📋 Readme		12/20/2011 10:37	Text Document	3 KB
👪 Setup		12/13/2011 3:20 PM	Application	930 KB
Setup.if2		6/22/2010 2:21 PM	IF2 File	19 KB
Setup2.if2	Type: Application Size: 929 KB Date modified: 12/13/2	9 2:15 PM 2011 3:20 PM	IF2 File	3 KB

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Step.3. Click on "Next " to install Driver.



Step.4. Click on "Yes " to agree License.





Step.5. Click on "Next" to install Driver.



Step.6. Click on "Next " to install Driver.





Step.7. Click on "Yes, I want to restart this computer now" to go on.



3.2 Panel Resolution Setting

Step.1. Right-click the desktop, and then click Properties.

Step.2. In the Display Properties dialog box, click the Settings tab.



Step.3. Click on "Monitor".

<mark>igital F</mark> General	lat Pane Adapter	l (640x Monitor	180) and Mo	bile Into	el(R) 945 anagement	🕐 🛛
Monit	or type Digital f	Flat Panel	(640x480)			
Monit	or settings				Propertie	
Scree	en refresh r	ate:				
Use	hardware	default set	ting			~
🔽 Hi	de modes	that this m	nonitor cannot d	isplay		
Cleari monit and/o	ng this che or cannot or damage	eck box al display co d hardwar	lows you to sele rrectly. This may e.	ct display lead to a	modes that n unusable c	this lisplay
			OK OK	Ca	ncel	Apply

Step.4. Click on "Hide modes that this monitor cannot display" to remove this option.



Step.5. Click on "Setting", then could choose 32bit color qualify.







Chipset Driver Installation

This chapter offers information on the chipset software Installation utility

- Installation of Chipset Driver
- Further information



Chapter 4 Chipset Driver Installation

4.1 Standard CMOS Features

Setp.1. Insert the CD that comes with the motherboard. Open the file document "Chipset Driver".



Setp.2. Click on "infinst_auto.exe" to install driver.




Setp.3. Click on "Yes " to agree License



Setp.4. Click on "Next" to install driver.



Setp.5. Click on "Next" to install driver.

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Step.7. Click on "Yes, I want to restart this computer now" to go on.





CHAPTER

Ethernet Driver Installation

This chapter offers information on the Ethernet software installation utility. Sections include:

- Introduction
- Installation of Ethernet Driver

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Chapter 5 Ethernet Driver Installation

Installation of Ethernet Driver

The Users must make sure which operating system you are using in the ID30 Motherboard before installing the Ethernet drivers. Follow the steps below to complete the installation of the Broadcom BCM57780 Gigabit Ethernet controller LAN drivers. You will quickly complete the installation.

Step.1. Right-click the desktop, and then click Properties.

Step.2. In the Other device dialog box, click the Settings tab.



Step.2 Click on "Update Driver" to execute the setup.

eneral	Driver	Details	Resources
17	Ethem	et Control	ler
	Driver	Provider:	Unknown
	Driver	Date:	Not available
	Driver	Version:	Not available
	Digital	Signer:	Not digitally signed
Dri	ver Detai	ls	To view details about the driver files.
Upd	late Drive	r]	To update the driver software for this device.
Roll Back Driver		ver]	If the device fails after updating the driver, roll back to the previously installed driver.
			Disables the selected device.
	Uninstall		To uninstall the driver (Advanced).

Step.4. Click on "Browse my computer for driver software" to install driver.

+	Search automatically for updated driver software Windows will search your computer and the Internet for the latest driver software for your device, unless you've disabled this feature in your device installation settings.
•	Browse my computer for driver software Locate and install driver software manually.

Step.5. Choose the path to install driver.



Browse for drive	r software on your compute	er	
Search for driver softw	vare in this location:		
E:\Driver\ID30\Win7\	LAN BCM57780_k57_32	▼ Br	owse

Setp.6. Click on "Close" and go on.

Update Driver Software - Broadcom NetLink (TM) Gigabit Ethernet	
Windows has successfully updated your driver software	
Windows has finished installing the driver software for this device:	
Broadcom NetLink (TM) Gigabit Ethernet	
	Close

CHAPTER **9**

Audio Driver Installation

This chapter offers information on the Audio software installation utility.

Sections include:

- Introduction
- Installation of Audio Driver



Chapter 6 Audio Driver Installation

6.1 Introduction

The ALC888 series are high-performance 7.1+2 Channel High Definition Audio Codecs providing ten DAC channels that simultaneously support 7.1 sound playback, plus 2 channels of independent stereo sound output (multiple streaming) through the front panel stereo outputs. The series integrates two stereo ADCs that can support a stereo microphone, and feature Acoustic Echo Cancellation (AEC), Beam Forming (BF), and Noise Suppression (NS) technology.

6.2 Installation of Audio Driver

The users must make sure which operating system you are using in the IA30 Motherboard before installing the Audio drivers. Follow the steps below to complete the installation of the Realtek ALC655 Audio drivers. You will quickly complete the installation.

Step.1. Insert the CD that comes with the motherboard. Open the file document "alc655_driver" and click on "Vista_Win7_R260.exe" to execute the setup.

Name	Date modified	Туре	Size
Vista_Win7_R260	5/10/2011 3:21 PM	Application	86,021 KB

Step.2. Click on "Yes" to install driver.

Realtek	High Definition Audio Driver R2.60	23
?	Welcome to the InstallShield Wizard The InstallShield Wizard will install Realtek High Definition Audio Driver on your computer . Do you want to continue the installation of new driver ?	
	Yes No	

Step.3. Click on "Yes, I want to restart my computer now" to finish installation.

🗠 Realtek High Definition Audio Driver Setup (3.21) R2.60
Realtek High Definition Audio Driver R2.60
Restarting Windows
Setup has finished copying files to your computer. Before you can use the program, you must restart your computer.
Select one of the following options and click OK to finish setup.
Yes, I want to restart my computer now.
No, I will restart my computer later.
ОК



Fintek COM Port

Driver Installation

This chapter describes the step by step method to install the Fintek COM port driver.



STEP 1.If the system is WIN7 please first do close UAC.(Refer following "Disabling

User Account

Control (UAC) in Windows 7")

STEP 2.Extract the Patch_0408.zip to a folder.

STEP 3.Double-click batch file(patch.bat) will install driver.

STEP 4.Check driver install success.

Before the update or update fail.

0	y in milliouns y system	DE F UNIVERS F	· ····································	111/213	-
ganiz	e 💌 🔳 Open with	New folder		8== - [1 0
1 *	Name	Date modified	Туре	Size	
192	sbp2port.sys	2010/11/21 上午 05:29	System file	84 KB	
-i	scfilter.sys	2010/11/21 上午 05:29	System file	26 K.B	
	🚳 scsiport.sys	2010/11/21 上午 05:29	System file	137 KB	
- Had	secdrv.sys	2009/7/14 上午 04:50	System file	20 K.B	
4	🚳 serenum.sys	2009/7/14 上午 07:45	System file	18 KB	
5	🚳 serial.sys	2009/7/14 上午 07:45	System file	82 KB	
	sermouse.sys	2009/7/14 上午 07:45	System file	20 KB	
	🚳 sffdisk.sys	2009/7/14 上午 07:45	System file	11 KB	
	🚳 sffp_mmc.sys	2009/7/14 上午 07:45	System file	12 KB	
	🚳 sffp_sd.sys	2010/11/21 上午 05:29	System file	13 KB	
12	(C)				

After the update and update success.

	I w windows + syste		• • • • • • • • • • • • • • • • • • •	IDVETS	~
rganize	• • 🗊 Open with	New folder		1= • 🗖	0
1.	Name	Date modified	Туре	Size	
2	sbp2port.sys	2010/11/21 上午 05:29	System file	84 KB	
	🚳 scfilter.sys	2010/11/21 上午 05:29	System file	26 KB	
	🚳 scsiport.sys	2010/11/21 上午 05:29	System file	137 KB	
8	🚳 secdrv.sys	2009/7/14 上午 04:50	System file	20 K.B	
•	🚳 serenum sys	2009/7/14 上午 07:45	System file	18 KB	
	5 senal.sys	2011/6/22 上午11:39	System file	90 KB	
2	Scimiouse sys	2009/7/14 上午 07.45	System file	20 KO	
	Sffdisk.sys	2009/7/14 上午 07:45	System file	11 KB	
	S sffp mmc.svs	2009/7/14 十年 07:45	System file	12 KB	

STEP 5. You will need to restart your computer for driver install success.

Type in this command from the Run menu:

C:\Windows\System32\UserAccountControlSettings.exe

or

uac



P Change User Accou	unt Control setti	ngs	
See more results			

To turn off UAC, move the slider to the Never notify position, and then click OK. If you're prompted for an administrator password or confirmation, type the password or provide confirmation.





To turn UAC back on, move the slider to choose when you want to be notified, and then click OK. If

you're prompted for an administrator password or confirmation, type the password or provide

confirmation.

You will need to restart your computer for UAC to be turned off.



GHAPTER 8

AMI BIOS Setup

This chapter describes how to set up the BIOS configuration



Chapter 7 AMI BIOS SETUP

Your computer comes with a hardware configuration program which called BIOS Setup that allows you to view and set up the system parameters.

The BIOS (Basic Input / Output System) is a layer of the software called 'firmware' which translates instructions from software (such as the operating system) into instructions that allow the computer hardware to understand the software programs. The BIOS settings also identify installed devices and establish many special features.

ENTERING BIOS SETUP

You can access the BIOS program just after you turn on your computer. Just press the "DEL" key when the following prompt appears:

Press to enter Setup.

When you press to enter the BIOS Setup image, the system interrupts the Power-On Self-Test (POST).

When you first enter the BIOS Setup Utility, you will enter the Main setup image. You can always return to the Main setup image by selecting the Main tab. There are two Main Setup options. They are described in this section. The Main BIOS Setup image is shown as below.





The Main BIOS setup image has two main frames. The left frame displays all the options that can be configured. Grayed-out options cannot be configured. On the contrary, options in blue can be configured. The right frame displays the key legend. Above the key legend is an area reserved for a text message. When an option is selected in the left frame, it is highlighted in white. Often a text message will

accompany it.

7.1 Advanced Setting

Aptio Setup Util: Main Advanced Chipset Boot	ity – Copyright (C) 2011 American Security Save & Exit	Megatrends, Inc.
Main Advanced Chipset Boot Legacy OpROM Support Launch PXE OpROM Launch Storage OpROM PCI Subsystem Settings ACPI Settings S5 RTC Wake Settings CPU Configuration Thermal Configuration IDE Configuration Intel Fast Flash Standy USB Configuration F81865 Super IO Configuration F81865 H/W Monitor PPM Configuration	<pre>Security Save & Exit [Enabled] [Enabled] Launch PXE OpROM Disabled Enabled</pre>	Enable or Disable Boot Option for Legacy Network Devices.
		F4: Save & Exit ESC: Exit
Version 2.13.12:	16. Copyright (C) 2011 American M	egatrends, Inc.

Launch PXE OpROM

SETTING	DESCRIPTION
Disabled	Use this setting to ignore all PXE Option ROMs.
Enabled	Use this setting to load PXE Option ROMs. To limit the PXE support to particular devices, use
	the function Use device for PXE.

Default: Disabled

Launch Storage OpROM

SETTING	DESCRIPTION
Disabled	Use this setting to ignore all Storage Option ROMs.
Enabled	Use this setting to load Storage Option ROMs. To limit the Storage support to particular
	devices, use the function Use device for Storage.

Default: Disabled

> PCI ROM Priority

Aptio Setup Util Advanced	ity – Copyright (C) 2011 Americ	an Megatrends, Inc.
PCI Bus Driver Version	V 2.05.01	In case of multiple Option ROMs (Legacy and EFI
PCI Option ROM Handling		Compatible), specifies what
PUI RUM Priority	(EFI Compatible RUM)	PCI Uption RUM to launch.
PCI Common Settings		
VGA Palette Snoon	[32 PCI BUS CIOCKS] [Disabled]	
PERR# Generation	[Disabled]	
SERR# Generation	[Disabled]	
	Legacy ROM	
	EFI Compatible ROM	th: Salact Senson
		↑↓: Select Item
		Enter: Select
		+/-: Change Upt. F1: General Help
		F2: Previous Values
		F3: Optimized Defaults
		ESC: Exit
Version 2.14.12	19. Copyright (C) 2011 American	Megatrends, Inc.

Selects the PCI Option ROM to launch in case Multiple Option ROMs (Legacy ROM and EFI Compatible ROM) are present.

> PCI Latency Timer

Use this function to select the number of PCI bus clocks to be used for the PCI latency timer.

Aptio Setup Utility Advanced	y – Copyright (C) 2011 American	Megatrends, Inc.
PCI Bus Driver Version	V 2.05.01	Value to be programmed into
PCI Option ROM Handling PCI ROM Priority	[EFI Compatible ROM]	FOI Latency Timer Register.
PCI Common Settings PCI Latency Timer VGA Palette Snoop PERR# Generation SERR# Generation	[32 PCI Bus Clocks] PCI Latency Timer 32 PCI Bus Clocks 64 PCI Bus Clocks 96 PCI Bus Clocks 128 PCI Bus Clocks 192 PCI Bus Clocks 224 PCI Bus Clocks 248 PCI Bus Clocks 248 PCI Bus Clocks	<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 American Megatrends, Inc.		



SETTING	DESCRIPTION
32 PCI Bus Clocks	Use this setting to program the PCI latency timer to 32 PCI bus clocks.
64 PCI Bus Clocks	Use this setting to program the PCI latency timer to 64 PCI bus clocks.
96 PCI Bus Clocks	Use this setting to program the PCI latency timer to 96 PCI bus clocks.
128 PCI Bus Clocks	Use this setting to program the PCI latency timer to 128 PCI bus clocks.
160 PCI Bus Clocks	Use this setting to program the PCI latency timer to 160 PCI bus clocks.
192 PCI Bus Clocks	Use this setting to program the PCI latency timer to 192 PCI bus clocks.
224 PCI Bus Clocks	Use this setting to program the PCI latency timer to 224 PCI bus clocks.
248 PCI Bus Clocks	Use this setting to program the PCI latency timer to 248 PCI bus clocks.

Default: 32 PCI Bus Clocks

VGA Palette Snoop

This filed controls the ability of a primary PCI VGA controller to share a common palette (when a snoop write cycles) with an ISA video card.



Enables or Disables VGA Palette Registers Snooping.

Default: Disabled

PERR# Generation

Enables or Disables PCI Device to Generate PERR#. Default: Disabled

SERR# Generation

Enables or Disables PCI Device to Generate SERR#. Default: Disabled

ACPI Settings

> Enable ACPI Auto Configuration

Enables or Disables BIOS ACPI Auto Configuration

Aptio Setup L Advanced	Htility – Copyright (C) 2011 Americ	an Megatrends, Inc.
ACPI Settings		Enables or Disables BIOS ACPI Auto Configuration
Enable ACPI Auto Configurat	ion [Disabled]	
Enable Hibernation ACPI Sleep State Lock Legacy Resources S3 Video Repost	[Enabled] [S3 (Suspend to RAM)] [Disabled] [Disabled]	
	Enable ACPI Auto Configuratio	n elect Screen elect 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.

Default: Disabled

Enable Hibernation

Enables or Disables System ability to Hibernate. This option may be not effective with some OS.

> ACPI Sleep State

SETTING	DESCRIPTION
Suspend Disable	System ability to Hibernate (OS/S3 Sleep State)
S1	CPU Stop Clock
S3	Suspend to RAM

Default: S3 (Suspend to RAM)

Lock Legacy Resources

Enables or Disable Lock of Legacy Resource.

Default: Disable

S3 Video Repost

Enables or Disable S3 Video Repost

Default: Disable

S5 RTC Wake Settings

Aptio Setup Uti. Main Advanced Chipset Boo	l <mark>ity – Copyright (C) 2011 Ameri</mark> t Security Save & Exit	can Megatrends, Inc.	
Legacy OpROM Support Launch PXE OpROM	[Disabled]	Enable system to wake from S5 using RTC alarm	
 ACPI Settings ACPI Settings S5 RTC Wake Settings CPU Configuration Thermal Configuration IDE Configuration Intel Fast Flash Standy VDD Settings 			
 ▶ USB Configuration ▶ F81865 Super IO Configuration ▶ F81865 H/W Monitor ▶ PPM Configuration 		++: Select Screen f↓: 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.			

SETTING	DESCRIPTION
Wake system with Fixed Time	System wake on alarm event. When enabled, System will
	wake on the hr: min:: sec specified.
Wake system with Dynamic Time	Options: Enabled, Disabled

Advanced	iiity – copyright (c) 2011 Amm	erican Megatrenos, inc.
Wake system with Fixed Time	[Disabled]	Enable or disable System wake
Wake system with Dynamic Tim	e [Disabled]	on alarm event. When enabled, System will wake on the hr::min::sec specified
	Wake system with Fixed T Disabled Enabled	ime Select Screen Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.13.	1216. Copyright (C) 2011 Amer	ican Megatrends, Inc.

CPU Configuration

Aptio Setup Utility	– Copyright (C) 2011 America	n Megatrends, Inc.
Advanced		
CPU Configuration		Enabled for Windows XP and Linux (OS optimized for
Processor Type EMT64 Processor Speed System Bus Speed Ratio Status Actual Ratio	Intel(R) Atom(TM) CPU Supported 2132 MHz 533 MHz 16 16	Hyper-Threading Technology) and Disabled for other OS (OS not optimized for Hyper-Threading Technology).
System Bus Speed Processor Stepping Microcode Revision L1 Cache RAM L2 Cache RAM	533 MHz 30661 262 2x56 k 2x512 k	
Processor Core Hyper-Threading	Dual Supported	<pre>++: Select Screen f↓: Select Item Enter: Select</pre>
Hyper-Threading		+/−: Change Opt.
Execute Disable Bit Limit CPUID Maximum	[Enabled] [Disabled]	F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.14.1219.	Copyright (C) 2011 American	Megatrends, Inc.

Hyper-threading

Enabled for Windows XP and Linux (OS optimized for Hyper-Threading Technology) and Disabled for other OS (OS not optimized for Hyper-Threading Technology). When Disabled, only one thread per enabled core is enabled.

> Execute Disable Bit

XD can prevent certain classes of malicious buffer overflow attacks when combined with a supporting OS (Windows Server 2003 SP1, Windows XP SP2, SuSE Linux 9.2, RedHat Enterprise 3 Update 3.)

Limit CPUID Maximum

Disabled for Windows XP



Thermal Configuration

Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc. Main Advanced Chipset Boot Security Save & Exit Legacy OpROM Support Launch PXE OpROM [Disabled] Thermal Configuration PCI Subsystem Settings SS RTC Wake Settings PCU Onfiguration CPU Configuration Thermal Configuration Heat Flash Standy USB Configuration F81865 Super 10 Configuration +: Select Screen F81865 H/W Monitor F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc. Version Megatrends, Inc.		<u> </u>	
Nain Advanced Chipset Boot Security Save X Exit Legacy OpROM Support Launch PXE OpROM [Disabled] PCI Subsystem Settings Formation PAPT Settings SS RTC Wake Settings S SP RTC Wake Settings Formation DPU Configuration Thermal Configuration Intel Fast Flash Standy USB Configuration PRB065 Super ID Configuration ++: Select Screen 11: Select Item Enter: Select PPM Configuration FileGes Flash Standy USB Configuration FileGes Super ID Configuration FR1865 Super ID Configuration ++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. FileGeneral Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit Science X:14.1219. Copyright (C) 2011 American Megatrends, Inc. Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.	Aptio Setup	Utility – Copyright (C) 2011 Ame	rican Megatrends, Inc.
Legacy OpROM Support Launch PXE OpROM [Disabled] PCI Subsystem Settings ACPI Settings ACPI Settings SS RTC Wake Settings > CPU Configuration Thermal Configuration > IDE Configuration Thermal Configuration > IDE Configuration Thermal Configuration > F81865 Super IO Configuration +*: Select Screen F81865 H/M Monitor +*: Select Item PPM Configuration F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.	Main Advanced Chipset	Boot Security Save & Exit	
 PCI Subsystem Settings PCPI Settings SS RTC Wake Settings CPU Configuration Thermal Configuration IDE Configuration PG1665 Super IO Configuration F81865 H/W Monitor PPM Configuration PPM Configuration PPM Configuration Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit 	Legacy OpROM Support Launch PXE OpROM	[Disabled]	Thermal Configuration Parameters
PPPM configuration It: 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.	 PCI Subsystem Settings ACPI Settings SS RTC Wake Settings CPU Configuration Thermal Configuration IDE Configuration Intel Fast Flash Standy USB Configuration F81865 Super IO Configurat F81865 H/W Monitor 	ion	++: Select Screen
Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.	PPM Configuration		<pre>11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
	Version 2.1	4.1219. Copyright (C) 2011 Ameria	can Megatrends, Inc.

> CPU Thermal Configuration > DTS SMM

Aptio Setup Advanced	Utility – Copyright (C) 2011 American	n Megatrends, Inc.
Aptio Setup Advanced Cpu Thermal Configuration DTS SMM	DUTILITY - Copyright (C) 2011 American Megatrends, Inc. Disabled: ACPI thermal management uses EC reported temperature values. Enabled: ACPI thermal management uses DTS SMM mechanism to obtain CPU temperature values. Out of Spec: ACPI Thermal Management uses EC reported temperature values. Out of Spec: ACPI Thermal Management uses EC reported temperature values and DTS SM Disabled Enabled Critical Temp Reporting (Out Of spec)	Disabled: ACPI thermal management uses EC reported temperature values. Enabled: ACPI thermal management uses DTS SMM mechanism to obtain CPU temperature values. Out of Spec: ACPI Thermal Management uses EC reported temperature values and DTS SMM used to handle Out of Spec
		: Select : 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.

SETTING	DESCRIPTION
Disabled	Uses EC reported temperature values
Enabled	Uses DTS SMM mechanism to obtain CPU temperature value
Critical Temp Reporting(Out of spec)	Uses EC reported temperature values and DTS SMM to handle out of
	spec



> Critical Trip Point

This value controls the temperature of the ACPI critical Trip point—the point in which the OS will shut the system off.

Aptio Setup Utility – Copyright (C) 2011 American Megatrends, Inc. Advanced		
Platform Thermal Configura	tion	This value controls the
Platform Thermal Configura Critical Trip Point Active Trip Point Lo Fan S Active Trip Point Hi Fan S Passive Trip Point Passive TC1 Value Passive TC2 Value Passive TSP Value	Lion [POR] Deed [55 C] Active Trip Point Lo Fan Speed Disabled 15 C 23 C 31 C 39 C 47 C 55 C 63 C 71 C 79 C 87 C 95 C 103 C 111 C 119 C	This value controls the temperature of the ACPI Active Trip Point - the point in which the OS will turn the cessor fan on low. elect Screen elect Item : Select Change Opt. eneral Help revious Values ptimized Defaults ave & Exit Exit
Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.		

- > Active Trip Point Lo Fan Speed
- > Active Trip Point Hi Fan Speed

This field enables or disables the smart fan feature. At a certain temperature, the fan starts turning. Once the temperature drops to a certain level, it stops turning again.

- Passive TC1 Value
- Passive TC2 Value
- > Passive TSP Value



IDE Configuration

Aptio Setup Main Advanced Chipset	<mark>Utility – Copyright (C) 2011 Ameri</mark> Boot Security Save & Exit	ican Megatrends, Inc.
Legacy OpROM Support Launch PXE OpROM PCI Subsystem Settings ACPI Settings SS RTC Wake Settings CPU Configuration Thermal Configuration Intel Fast Flash Standy USB Configuration F81865 Super IO Configurat F81865 H/W Monitor PPM Configuration	[Disabled]	IDE Devices Configuration ++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.1	4.1219. Copyright (C) 2011 America	an Megatrends, Inc.

> Configure SATA as

Determines how SATA controllers(s) operate. The options are IDE and AHCI.

Aptio Setup Utili Advanced	ty – Copyright (C) 2011 Ar	merican Megatrends, Inc.
SATA PortO SATA Port1	Not Present Not Present	Select a configuration for SATA Controller.
SATA Controller(s)	[Enabled]	
Configure SATA as PortO Speed Limit Port1 Speed Limit	[AHCI] [No Limit] [No Limit]	
SATA Port 0 SATA Port 0 Hot Plug SATA Port 1 SATA Port 1 Hot Plug	[Enabled] Configure SATA as IDE AHCI	
Misc Configuration for hard dis	k	t: Select Screen t: Select Item Enter: Select time Select
		+/−: Change opt. F1: General Help
		F2: Previous values F3: Optimized Defaults
		F4: Save & Exit ESC: Exit
Version 2.13.121	6. Copyright (C) 2011 Amer	rican Megatrends, Inc.



Port0 Speed Limit

Select Port0 AHCI Speed Limit. The options are No Limit, GEN1 Rate and GEN2 Rate.

Aptio Setup Utili Advanced	ty – Copyright (C) 2011 Ame	rican Megatrends, Inc.
SATA Port0 SATA Port1	Not Present Not Present	Select PortO AHCI Speed Limit.
SATA Controller(s)	[Enabled]	
Configure SATA as PortO Speed Limit Port1 Speed Limit SATA Port O SATA Port O Hot Plug SATA Port 1 SATA Port 1 Hot Plug	[AHCI] [No Limit] [No Limit] [Enabled] PortO Speed Limit No Limit GEN1 Rate GEN2 Rate	+: Select Screen
Misc Configuration for hard dis		<pre>4: Select Item nter: 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 Ameri	can Megatrends, Inc.

> SATA Port 0/1

Enable or disable SATA Port.

.

SATA Port 0/1 Hot Plug

Designates this port as Hot Pluggable

Intel Fast Flash Standy

Aptio Setup Uti Main Advanced Chipset Boo	i <mark>lity – Copyright (C) 2011 Americar</mark> ot Security Save & Exit) Megatrends, Inc.
Legacy OpROM Support Launch PXE OpROM ▶ PCI Subsystem Settings	[Disabled]	Intel Fast Flash Standby Technology Configuration.
 ACPI Settings S5 RTC Wake Settings CPU Configuration Thermal Configuration IDE Configuration Intel Fast Flash Standy USB Configuration ES1085 Support 10 Configuration 		
 F81865 H/W Monitor FPM Configuration 	•	++: Select Screen f1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
Version 2.14.1	219. Copyright (C) 2011 American ⊧	ESC: Exit Megatrends, Inc.

iFFS Support

Enable or disable iFFS.

Apti Advanced	io Setup Utility – Copyright (C) 2011 American	Megatrends, Inc.
iFFS Support	[Disabled]	Enable or disable iFFS. ++: Select Screen 1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Ver	rsion 2.14.1219. Copyright (C) 2011 American M	egatrends, Inc.



USB Configuration

Aptio Setup Ut Main Advanced Chipset Bo	<mark>ility – Copyright (C) 2011 Am</mark> ot Security Save & Exit	merican Megatrends, Inc.
Legacy OpROM Support Launch PXE OpROM Launch Storage OpROM PCI Subsystem Settings ACPI Settings SS RTC Wake Settings CPU Configuration Thermal Configuration IDE Configuration Intel Fast Flash Standy USB Configuration F81865 Super IO Configuratio F81865 H/W Monitor PPM Configuration	[Enabled] [Enabled]	USB Configuration 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 2.13.	1216. Copyright (C) 2011 Amer	rican Megatrends, Inc.

Legacy USB support

Enables Legacy USB support. AUTO option disable legacy support if no USB devices are connected. DISABLE option will keep USB devices available only for EFI applications.

ECHI Hand-off

This is a workaround for OSes without EHCI hand-off support. The EHCI ownership change should be claimed by EHCI driver.

Default: Disabled

USB transfer time-out

The time-out value for control, bulk, and Interrupt transfers.

Default: 20 sec

Device reset time-out

The USB mass storage device Start Unit command time-out. Default: 20 sec

Device power-up delay

Maximun time the device will take before it properly reports itself to the Host Controller. 'Auto' uses default value: for a Root port it is 100 ms, for a Hub port the delay is taken from Hub descriptor.



Mass Storage Device:

Mass storage device emulation type. 'AUTO' enumerates devices less than 530MB as floppies. Forced FDD option can be used to force HDD formatted drive to boot as FDD.

Aptio Setup Ut. Advanced	ility – Copyright (C) 2011 American	Megatrends, Inc.
USB Configuration USB Devices: 1 Drive, 1 Keyboard Legacy USB Support EHCI Hand-off	[Enabled] [Disabled]	Mass storage device emulation type. 'AUTO' enumerates devices less than 530MB as floppies. Forced FDD option can be used to force HDD formatted drive to boot as FDD (e.g. ZIP drive).
USB hardware delays and time USB transfer time-out Device reset time-out Device power-up delay Mass Storage Devices: JetFlashTranscend 160B 1100	-outs: JetFlashTranscend 166B 1100 — Auto Floppy Forced FDD Hard Disk CD-ROM	Select Screen Select Item r: 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	egatrends, Inc.



F81865 Super IO Configuration

System Super IO Chip Parameters.

Aptio Setup Uti: Main Advanced Chipset Boot	L <mark>ity – Copyright (C) 2011 Ameri</mark> ca : Security Save & Exit	an Megatrends, Inc.
Main Advanced Chipset Boot Legacy OpROM Support Launch PXE OpROM PCI Subsystem Settings Settings ACPI Settings SS RTC Wake Settings CPU Configuration IDE Configuration IDE Configuration Settings Standy USB Configuration F81865 Super IO Configuration F81865 H/W Monitor FPM Configuration	[Disabled]	<pre>**: Select Screen **: Select Screen **: 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	megatrenus, inc.

Serial Port 1 \circ 2 \circ 3 \circ 4 \circ 5 \circ 6 Configuration

Aptio Setup Utility – Advanced	Copyright (C) 2011 American	Megatrends, Inc.
F81865 Super IO Configuration		Set Parameters of Serial Port 1 (COMA)
 F81865 Super IO Chip Serial Port 1 Configuration Serial Port 2 Configuration Serial Port 3 Configuration Serial Port 4 Configuration Serial Port 5 Configuration Serial Port 6 Configuration Parallel Port Configuration 	F81865	
Watch Dog Timer Select	[Disabled]	
		<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 2.13.1216. Co	pyright (C) 2011 American M	egatrends, Inc.



Aptio Setup Utility - Advanced	Copyright (C) 2011 American	Megatrends, Inc.
Serial Port 1 Configuration		Enable or Disable Serial Port
Serial Port Device Settings	[Enabled] IO=3F8h; IRQ=4;	(666)
Change Settings	[Auto]	
	Serial Port — Disabled Enabled	<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. Co	pyright (C) 2011 American Mo	egatrends, Inc.

Set Parameters of Serial Ports. User can Enable/Disable the serial port and Select an optimal settings for the Super IO Device. Enable or Disable Serial Port (COM) **Default:** Enable

F81865 Super IO Configuration			
F81865 Super IO Chip Serial Port 1 Configuration Serial Port 2 Configuration Serial Port 3 Configuration	F81865		
Serial Port 4 Configuration Serial Port 5 Configuration Parallel Port Configuration Watch Dog Timer Select	Addin bog Disabled 1 Min 2 Min 3 Min 4 Min 5 Min 6 Min 7 Min 9 Min 10 Min	Timer Select	 ←: Select Screen ↓: Select Item nter: Select /-: Change Opt. 1: General Help 2: Previous Values 3: Optimized Defaults F4: Save & Exit ESC: Exit

The watchdog timer circuit has to be triggered within a specified time by the application software. If the watchdog is not triggered because proper software execution fails or a hardware malfunction occurs, it will reset the system



GPIO Port Configuration





F81865 H/W Monitor

Aptio Setup Util Main Advanced Chipset Boot	. <mark>ity – Copyright (C) 2011</mark> A ∵ Security Save & Exit	merican Megatrends, Inc.
Legacy OpROM Support Launch PXE OpROM Launch Storage OpROM > PCI Subsystem Settings > ACPI Settings > SS RTC Wake Settings > CPU Configuration > Thermal Configuration > IDE Configuration > Intel Fast Flash Standy > USB Configuration	[Enabled] [Enabled]	Monitor hardware status
 ▶ F81865 Super IO Configuration ▶ F81865 H/W Monitor ▶ PPM Configuration 		<pre>++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>



Fan 1 · 2 Config smart fan mode, can choose 50,60 and 70 three degree mode



PPM Configuration

Aptio Setup Main Advanced Chipset	Utility – Copyright (C) 2011 Americ Boot Security Save & Exit	an Megatrends, Inc.
Legacy OpROM Support Launch PXE OpROM PCI Subsystem Settings ACPI Settings SS RTC Wake Settings CPU Configuration Thermal Configuration Intel Fast Flash Standy USB Configuration F81865 Super IO Configurat F81865 H/W Monitor PPM Configuration	[Disabled] tion	<pre>PPM Configuration Parameters ++: 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 Conuright (C) 2011 American	Megatrends Inc
Aptio Setup	Utility – Copyright (C) 2011 Ameri	can Megatrends, Inc.
PPM Configuration		Enable/Disable Intel SpeedStep
EIST CPU C state Report Enhanced C state CPU Hard C4E CPU C6 state C4 Exit Timing C-state POPDONN C-state POPUP	[Disabled] [Enabled] [Enabled] [Enabled] [Fast] [Enabled] [Enabled] [Enabled] Iterabled Iterabled Iterabled Iterabled Iterabled	<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>

> EIST

Enable/Disable Intel SpeedStep.

> CPU C state Report

Enable/Disable CPU C state report to OS.



> C4 Exit Timing

This option controls a programmable time for the CPU voltage to stabilize when exiting from a C4 state.

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Engineering Spec.



Chipset

This section allows you to configure and improve your system and allows you to set up some system features according to your preference.

Main Advanced Chipset Boot Secu	rity Save & Exit	
⊢Host Bridge ▶ South Bridge		Host Bridge 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 2.13.1216. Co Iemory Frequency and Tin Aptio Setup Utility -	pyright (C) 2011 American ning Copyright (C) 2011 Americ	Megatrends, Inc. an Megatrends, Inc.
Version 2.13.1216. Co Iemory Frequency and Tin Aptio Setup Utility - Chipset Memory Frequency and Timing Intel IGD Configuration	opyright (C) 2011 American ning Copyright (C) 2011 Americ	Megatrends, Inc. an Megatrends, Inc. Config Memory Frequency ar Timing Settings
Version 2.13.1216. Co Iemory Frequency and Tim Aptio Setup Utility - Chipset Memory Frequency and Timing Intel IGD Configuration ******** Memory Information ******** Memory Frequency Total Memory DIMM#0 DIMM#1	pyright (C) 2011 American ning Copyright (C) 2011 Americ 1067 MHz(DDR3) 4096 MB Not Present 4096 MB	Megatrends, Inc. an Megatrends, Inc. Config Memory Frequency an Timing Settings.
Version 2.13.1215. Or Iemory Frequency and Tim Aptio Setup Utility - Chipset Memory Frequency and Timing Intel IGD Configuration ********* Memory Information ************************************	pyright (C) 2011 American ning Copyright (C) 2011 Americ 1067 MHz(DDR3) 4096 MB Not Present 4096 MB	Megatrends, Inc. an Megatrends, Inc. Config Memory Frequency at Timing Settings. ++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

Can choose enable or disable MRC fast boot.



> Intel IGD Configuration

Chipset		negatienus, inc.
Memory Frequency and Timing Intel IGD Configuration ******** Memory Information ******* Memory Frequency Total Memory DIMM#0 DIMM#1	1067 MHz(DDR3) 4096 MB Not Present 4096 MB	Config Intel IGD Settings.
		++: 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. C	opyright (C) 2011 American ⊨	legatrends, Inc.
Aptio Setup Utility – Chipset	· Copyright (C) 2011 Americar	Megatrends, Inc.
Intel IGD Configuration Auto Disable IGD IGFX - Boot Type LCD Panel Type Active LFP Panel Scaling Backlight Control IGD Clock Source Backlight Control Support Fixed Graphics Memory Size ALS Support BIA	[Enabled] [VBIOS Default] [BO0x600 LVDS] [Int-LVDS] [Auto] [PWM Normal] [External Clock] [VBIOS-Default] [128MB] Auto Disable IGD Disabled Enabled	Auto disable IGD upon externa. GFX detected. ++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

> Auto Disable IGD

Auto disable IGD upon external GFX detected.
Engineering Spec.



IGFX-Boot Type

Select the Video Device which will be activated during POST. This has no effect if external graphics present.

Aptio Setup Uti Chipset	lity – Copyright (C) 2011 Ame	rican Megatrends, Inc.
Intel IGD Configuration		DVMT Mode/Fixed Mode Select
Primary Display Internal Graphics DVMT Mode Select DVMT Memory DVMT Pre-Allocated IGD Clock Source *********** LVDS Configuration **	[Auto] [Auto] [DVMT Mode] [128MB] [8M] [External Clock] ∞∞∞∞∞	
IGFX - Boot Type LCD Panel Type Panel Scaling Backlight Control Backlight Control Support BIA	DVMT Mode Select — Fixed Mode DVMT Mode	++: Select Screen 14: Select Item Enter: Select
HLS SUPPORT	[01580160]	+/-: Change Upt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Vancian 2, 12, 1	246 - Conunight (C) 2044 Amoni	con Magataanda Tas
VCI 31011 2.13.1	2011 Mile 1	can negati entas, inc.

> DVMT

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Intel's Dynamic Video Memory Technology (DVMT) takes that concept further by allowing the system to dynamically allocate memory resources according to the demands of the system at any point in time. The key idea in DVMT is to improve the efficiency of the memory allocated to either system or graphics processor.

> IGD Clock Source

IGD clock selection.

LCD Panel Type

Select LCD panel used by Internal Graphics Device by selecting the appropriate setup item.

Panel Scaling

Select the LCD panel scaling option used by the Internal Graphics Device.

Backlight Control

IGD clock selection.

Backlight Control Support

Back Light Control Setting.

> BIA

Auto:GMCH Use VBT Default; Level n: Enabled with Selected Aggressiveness Level, .

ALS Support

Valid only for ACPI.



TPT Devices

Enable/Disable Intel IO controller hub device

> PCI Express Root Port 0/1/2/3



PCI Express root port settings

> DMI Link ASPM Control

The Desktop Management Interface (DMI) generates a standard framework for managing and tracking components in a desktop, notebook or server computer, by abstracting these components from the software that manages them.

> PCI-Exp. High Priority Port

Select a PCI Express High Priority Port.

Restore AC Power Loss

Select power on/off when AC power plug in.

5.3 Boot

> Setup Prompt Timeout

Number of seconds to wait for setup activation key. 65535 (0xFFFF) means indefinite waiting.

Default: 1



Aptio Setup Utility Main Advanced Chipset <mark>Boot</mark> Se	– Copyright (C) 2011 America curity Save & Exit	n Megatrends, Inc.
Boot Configuration Setup Prompt Timeout Bootup NumLock State	<mark>1</mark> [0n]	Number of seconds to wait for setup activation key. 65535(0xFFFF) means indefinite waiting
Quiet Boot Fast Boot Skip VGA Skip USB Skip PS2 CSM16 Module Version	[Disabled] [Enabled] [Disabled] [Disabled] [Disabled]	worting.
GateA20 Active Option ROM Messages Interrupt 19 Capture Boot Option Priorities	[Upon Request] [Force BIOS] [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 2,13.1216.	Copyright (C) 2011 American	Megatrends, Inc.

Bootup NumLock State

Select the keyboard NumLock State

Default: On

Quiet Boot

Enable or Disable Quiet Boot Option.

Default: Disable

GateA20 Active

UPON REQUEST – GA20 can be disabled using BIOS services. Always – do not allow disabling GA20; this option is useful when any RT code is executed above 1MB.

Option ROM Messages

Set display mode for Option ROM. Options are Force BIOS and Keep Current.

Interrupt 19 Canture

Enable: Allows Option ROMs to trap Int 19.

5.4 Security

Administrator Password

This section allows you to configure and improve your system and allows you to set up some system features according to your preference.



Engineering Spec.

Aptio Setup Uti. Main Advanced Chipset Boo	Lity – Copyright (C) 20 : Security Save & Exi	11 American Megatrends, Inc. t
Password Description		Set Administrator Password
If ONLY the Administrator's pa then this only limits access only asked for when entering S If ONLY the User's password is is a power on password and mus boot or enter Setup. In Setup have Administrator rights. The password length must be in the following range:	assword is set, to Setup and is Setup. to set, then this to be entered to the User will	
Minimum length Maximum length	3 20	
Maximum length 20 Administrator Password User Password		<pre>++: Select Screen fl: 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	219. Copyright (C) 2011	American Megatrends, Inc.

> Administrator Password

Set Setup Administrator Password.

> User Password

Set User Password.

Engineering Spec.

5.5 Save & Exit

Aptio Setup Utili Main Advanced Chipset Boot	ty – Copyright (C) 2011 American Security Save & Exit	Megatrends, Inc.		
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 Restore User Defaults	Save & Exit Setup Save configuration and exit?	Exit system setup after saving the changes.		
Boot Override Launch EFI Shell from filesyste	Yes No	<pre>+: Select Screen ↓: Select Item nter: Select /-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>		
Version 2.13.1216. Copyright (C) 2011 American Megatrends, Inc.				

Save Changes and Exit

Exit system setup after saving the changes.

Disacard Changes and Exit

Exit system setup without saving any changes.

Save Changes and Reset

Reset the system after saving the changes.

Discard Changes and Reset

Reset system setup without saving any changes.

Save Changes

Save Changes done so far to any of the setup options.

Discard Changes

Discard Changes done so far to any of the setup options.

Restore Defaults

Restore/Load Defaults values for all the setup options.

Save as User Defaults

Save the changes done so far as User Defaults.

Restore User Defaults

Restore the User Defaults to all the setup options.

> Launch EFI Shell from filesystem devices

Attempts to launch EFI shell application from one of the available filesystem devices.

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Appendix

Note1: Digital I/O Sample Code

To find the Digital I/O Sample code, please refer to the IH70 driver DVD SDK or contact us.

Note2: Watchdog Sample Code

To find the Watchdog Sample code, please refer to the IH70 driver DVD SDK or contact us.