BOXER-6914

Fanless Embedded Box PC
Intel® Atom™ D2550 1.86GHz Processor
CFast™/SIM Slot
2 DIO, 14/16 COMs
2 USB 3.0, 4 USB 2.0

BOXER-6914 Manual 1st Ed.
April 10, 2015

Copyright Notice

Acknowledgments

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- CFast™ is a trademark of the Compact Flash Association.
- Intel®, Atom™ are trademarks of Intel® Corporation.
- Microsoft Windows® is a registered trademark of Microsoft Corp.
- PC/AT, PS/2, and VGA are trademarks of International Business Machines Corporation.

All other product names or trademarks are properties of their respective owners.

Packing List

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

- 1 BOXER-6914 Embedded Box PC
- 1 Phoenix Power Connector
- 4 M3 x 4mm Screws
- 4 6# -32 x 10mm Screws
- 2 Wallmount Brackets
- 1 DVD-ROM for manual (in PDF format) and Drivers

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

Safety & Warranty

Please read the following safety instructions carefully. It is advised that you keep this manual for future references

1. Disconnect this device from any AC supply before cleaning.
2. While cleaning, use a damp cloth instead of liquid or spray detergents.
3. For any pluggable equipment, the power outlet must be installed near the device and easily accessible.
4. Keep this device away from humidity.
5. Place this device on a solid surface during installation. Dropping it or letting it fall could cause damage.
6. The openings on the device's enclosure are for dissipating heat. DO NOT COVER THE OPENINGS.
7. Watch out for high temperatures that may occur during system operation.
8. Make sure the voltage of the power source is correct before connecting the device 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 device should be noted.
11. If the device is not to be used for a long time, disconnect it from the power supply to avoid damage by transient over-voltage.
12. Never pour any liquid into the openings. This could cause fire or electric shock.

13. As most electronic components are sensitive to static electrical charge, be sure to ground yourself to prevent static charge when installing the internal components. Use a grounding wrist strap and contain all electronic components in any static-shielded devices.

14. If any of the following situations arises, please the contact our service personnel:

- **i. Damaged power cord or plug**
- **ii. Liquid intrusion to the device**
- **iii. Exposure to moisture**
- **iv. Device is not working as expected or in a manner as described in this manual**
- **v. The device is dropped or damaged**
- **vi. Any obvious signs of damage displayed on the device**

15. DO NOT LEAVE THIS DEVICE IN AN UNCONTROLLED ENVIRONMENT WHERE THE STORAGE TEMPERATURE IS BELOW -10° C (14°F) OR ABOVE 60° C (140° F) TO PREVENT DAMAGE.

FCC

This device complies with Part 15 FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received including interference that may cause undesired operation.

Caution:

There is a danger of explosion if the battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions and your local government's recycling or disposal directives.

Attention:

Il y a un risque d'explosion si la batterie est remplacée de façon incorrecte. Ne la remplacer qu'avec le même modèle ou équivalent recommandé par le constructeur. Recycler les batteries usées en accord avec les instructions du fabricant et les directives gouvernementales de recyclage.

China RoHS Requirements
产品中有毒有害物质或元素名称及含量
AAEON Boxer/ Industrial System

部件名称	有毒有害物质或元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚(PBDE)
印刷电路板及其电子组件	×	○	○	○	○	○
外部信号连接器及线材	×	○	○	○	○	○
外壳	×	○	○	○	○	○
中央处理器与内存	×	○	○	○	○	○
硬盘	×	○	○	○	○	○
电源	×	○	○	○	○	○

O：表示该有毒有害物质在该部件所有均质材料中的含量均在 **SJ/T 11363-2006** 标准规定的限量要求以下。

X：表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 **SJ/T 11363-2006** 标准规定的限量要求。

备注：
一、此产品所标示之环保使用期限，系指在一般正常使用状况下。
二、上述部件物质中央处理器、内存、硬盘、电源为选购品。

Contents

Chapter

1

General Information

1.1 Introduction

Due to the growing popularity from the IPC market, AAEON proudly introduces the newest entry in Boxer series, BOXER-6914. Being a control center, the BOXER-6914 is suitable for Machine Control, Data Processing, Fleet Management, Data Management.
BOXER-6914 equips a high efficiency heat conduction mechanism.

The BOXER-6914 has flexible expansion capabilities such as two USB 3.0 ports and four USB 2.0 ports, two Digital I/Os, 14/16 COM ports, and 2 Full-size Mini-PCIe slots.

Rugged Design for Harsh Environment

The BOXER-6914 is designed for harsh environment with the following features: It can withstand strong vibrations of up to 3 g rms, and is well suited for high-vibration environment with the anti-vibration hard drive device option. In addition, the BOXER-6914 offers low power consumption system that while operating in ambient temperatures ranging from -20° to 65°C with the Intel® Atom™ D2550 processor.

The BOXER-6914 is a standalone high performance box PC designed for long-life operation and with high reliability. It can replace traditional methods and become the mainstream controller for the multimedia entertainment market.

1.2 Features

- Fanless Design
- Intel® Atom™ D2550 Processor
- Intel® NM10 Chipset
- Gigabit Ethernet, RJ-45 x 2
- DVI-D x 1
- SATA 3.0 Gb/s x 1, CFast™ Slot x 1
- USB 3.0 x 2, USB 2.0 x 4, COM x 14/16, DI/O x 2
- 2.5” SATA HDD Bay x 1, CFast™ Slot x 1
- Full-size Mini-PCIe slots

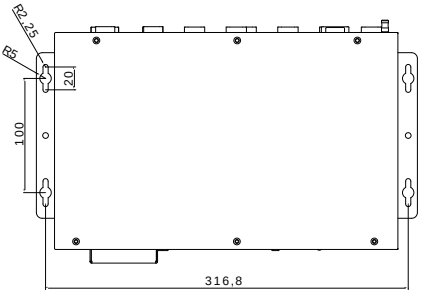
1.3 Specifications

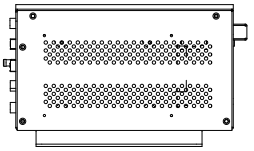
● CPU		Intel® Atom™ D2550 Processor, 1.86 GHz
● Chipset		Intel® NM10
● System Memory		DDR3 800/1066 SODIMM x 1, Max. 4 GB
● Display Interface	VGA	DB-15 x 1
	DVI	DVI-D x 1
	HDMI	—
	Others	—
● Storage Device	SSD	CFast™ slot x 1
	HDD	2.5” SATA HDD Bay x 1
	Others	—
● Network	LAN	Gigabit Ethernet
	Wireless	Optional by MiniCard module
● Front I/O	USB Host	USB 2.0 x 2
	LAN	—
	Serial Port	—
	DIO	—
	Audio	—
	KB/MS	—
	Others	Power On/Off button x 1, 2-pin Remote Power on/off terminal block x 1, CFast™ slot x 1, SIM slot, Line-out x 1

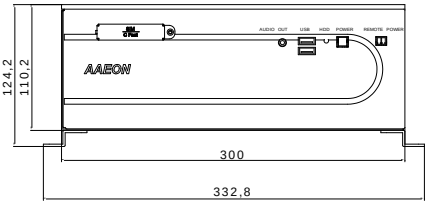
● Rear I/O	USB Host	USB 3.0 x 2, USB 2.0 x 2
	LAN	RJ-45 x 2 for Gigabit Ethernet
	Serial Port	DB-9 x 2 for RS-232/422/485 (cableless)
		DB-9 x 12 for RS-232 (cableless)
		DB-9 x 2 for RS-232 (optional by cable)
	DIO	Programmable 30-channel digital I/O
	Audio	—
	KB/MS	—
	Others	DC-in 3-pin terminal block (9~30V)
		Antenna hole x 2
		DB-15 x 1 for VGA
		DVI-D x 1
● Expansion	PCI-E[x1]	Mini PCI-E Full-Size Card x 2
	PCI	—
	Mini Card	—
	Mini PCI	—
	Others	—
● Indicator	Front	HDD LED x 1
		System Power On LED x 1
	Rear	—
● Power Requirement		DC-in 3-pin terminal block (9~30V)
● System Cooling		Passive cooling
● Mounting		Wall-mount
● Operating Temperature		-4°F ~ 140°F (-20°C ~ 60°C). Ambient

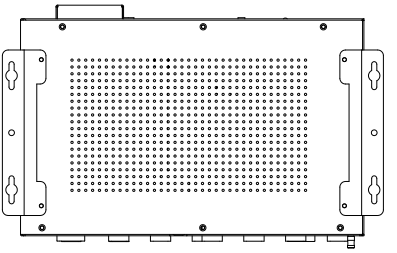
		w/ airflow, with wide-temp CFast™ & RAM -4°F ~ 131°F (-20°C ~ 55°C). Ambient w/ airflow, with wide-temp HDD & RAM -4°F ~ 131°F (-20°C ~ 55°C). Without airflow, with wide-temp CFast™ & RAM -4°F ~ 122°F (-20°C ~ 50°C). Without airflow, with wide-temp CFast™ & RAM
● Storage Temperature		-4°F ~ 158°F (-20°C ~ 70°C)
● Anti-Vibration		5 g rms/ 5~500 Hz/ operation-CFast™; 1 g rms/ 5~500 Hz/ operation-HDD
● Anti-Shock		50 G peak acceleration (11 msec. duration) –CFast™ 20 G peak acceleration (11 msec. duration) –HDD
● Certification	EMC	CE/FCC Class A
	Safety	—
● Dimension (W x H x D)		13.10” x 5.39” x 7.48” (332.8mm x 136.8mm x 190mm)
● Gross Weight		4.4kg
● Net Weight		2.6kg
● OS Support		Windows® XP 32-bit, Windows® 7 32-bit, Linux Fedora 32-bit

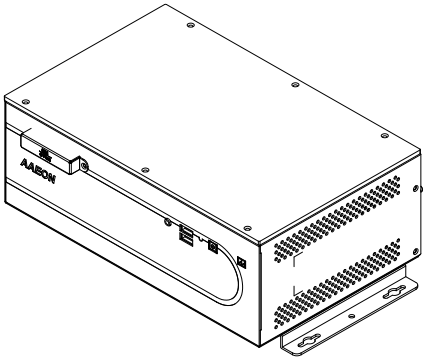
1.4 Product Overview

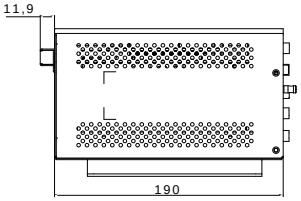









AAEON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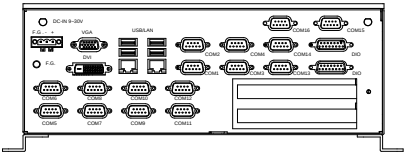

DC-IN 9~30V
F.G.
VGA
USB/LAN
COM16
COM15
COM14
DIO
COM13
COM12
COM11
COM10
COM9
COM8
COM7
COM6
COM5
COM4
COM3
COM2
COM1
COM0

Chapter

2

Quick Installation Guide

2.1 List of Jumpers

The board has a number of jumpers that allow you to configure your system to suit your application.

The table below shows the function of each of the board's jumpers:

Label	Function
JP1	RS-232/422/485 Selector (COM2)
JP2	RS-232/422/485 Selector (COM1)
JP10	Clear CMOS

Note: By default, RS-232/422/485 to be selected via BIOS settings

2.2 List of Carrier Board Connectors

The carrier board has a number of connectors that allow you to configure your system to suit your application.

The table below shows the function of each of the connectors:

Label	Function
CN1	DCIN
CN2	COM1/2 Port
CN3	COM 3/4 Port
CN4	COM 13/14 Port
CN5	Digital I/O
CN6	USB 3.0 x 2 / LAN1 Connector
CN7	USB 2.0 x 2 / LAN2 Connector
CN8	Extender I/O 3
CN9	COM port Extender I/O 1
CN10	COM port Extender I/O 2
CN11	LPC Debug port
CN12	PCIe x 1 Riser Connector 1
CN14	MiniCard Connector (with onboard SIM)
CN15	MiniCard Connector (with onboard SIM)
CN16	SATA 2.0 Connector
CN17	PCIe x 1 Riser Connector 2
CN21	USB 2.0 Connector x 2
CN22	Audio Connector
CN23	Line out Connector
CN24	SATA Power Connector

CN26	Remote Power SW
CN27, CN28	COM Express Type 6 Connector
CN29	COM 15 Connector
CN30	COM 16 Connector
CN31	CFast Connector
DVI + VGA	DVI-D & VGA Connector

Note 1: Wake-on-LAN supported in LAN1 only

Note 2: USB 3.0 drives must be installed before USB 3.0 ports can be used

Note 3: Max. resolution for DVI on Windows XP is 1920 x 1200

2.3 List of I/O Board Connectors

The I/O board has a number of connectors that allow you to configure your system to suit your application.

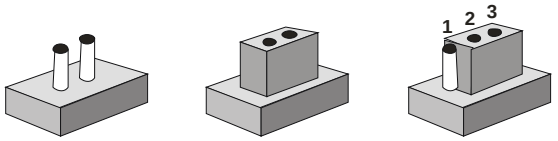
The table below shows the function of each of the connectors:

Label	Function
CN3A	COM 5
CN3B	COM 6
CN4A	COM 7
CN4B	COM 8
CN5A	COM 9
CN5B	COM 10
CN6A	COM 11
CN6B	COM 12

2.4 Setting Jumpers

You configure your card to match the needs of your application by setting jumpers. A jumper is the simplest kind of electric switch. It consists of two metal pins and a small metal clip (often protected by a plastic cover) that slides over the pins to connect them. To “close” a jumper you connect the pins with the clip.

To “open” a jumper you remove the clip. Sometimes a jumper will have three pins, labeled 1, 2 and 3. In this case you would connect either pins 1 and 2 or 2 and 3.



Open **Closed** **Closed 2-3**

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

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

In general, you simply need a standard cable to make most connections.

2.5 RS-232/422 Selector for COM1 and COM2 (JP1, JP2)

JP1,JP2	Connection
RS-232	1-2 close, 3-4 open
RS-422	1-2, 3-4 close

RS-232

Pin	Signal	Pin	Signal
1	DCD	6	DSR
2	RXD	7	RTS
3	TXD	8	CTS
4	DTR	9	RI
5	GND		

RS-422

Pin	Signal	Pin	Signal
1	TXD-	6	NC
2	TXD+	7	NC
3	RXD-	8	NC
4	RXD+	9	NC
5	GND		

RS-485

Pin	Signal	Pin	Signal
1	D-	6	NC
2	D+	7	NC
3	NC	8	NC
4	NC	9	NC
5	GND		

2.6 Clear CMOS (JP10)

JP10	Function
1-2	Normal (Default)
2-3	Clear CMOS

2.7 Digital I/O (CN5 – Carrier Board)

CN5A (Carrier board)

Pin	Signal	Pin	Signal
1	DIO0-0	9	DIO1-0
2	DIO0-1	10	DIO1-1
3	DIO0-2	11	DIO1-2
4	DIO0-3	12	DIO1-3
5	DIO0-4	13	DIO1-4
6	DIO0-5	14	DIO1-5
7	DIO0-6	15	DIO1-6
8	DIO0-7		

CN5B (Carrier board)

Pin	Signal	Pin	Signal
1	DIO1-7	9	DIO2-7
2	DIO2-0	10	DIO3-0
3	DIO2-1	11	DIO3-1
4	DIO2-2	12	DIO3-2
5	DIO2-3	13	DIO3-3
6	DIO2-4	14	DIO3-4
7	DIO2-5	15	DIO3-5
8	DIO2-6		

2.8 SATA Power Connector (CN24)

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

2.9 COM 3 - 16 (CN3, 3A, 3B, 4, 4A, 4B, 5A, 5B, 6A, 6B, 29, 30)

RS-232

Pin	Signal	Pin	Signal
1	DCD	6	DSR
2	RXD	7	RTS
3	TXD	8	CTS
4	DTR	9	RI
5	GND		

Chapter

3

AMI BIOS Setup

3.1 System Test and Initialization

These routines test and initialize board hardware. If the routines encounter an error during the tests, you will either hear a few short beeps or see an error message on the screen. There are two kinds of errors: fatal and non-fatal. The system can usually continue the boot up sequence with non-fatal errors.

System configuration verification

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

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

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

The BOXER-6914 CMOS memory has an integral lithium battery backup for data retention. However, you will need to replace the complete unit when it finally runs down.

3.2 AMI BIOS Setup

AMI BIOS ROM has a built-in Setup program that allows users to modify the basic system configuration. This type of information is stored in battery-backed CMOS RAM and BIOS NVRAM so that it retains the Setup information when the power is turned off.

Entering Setup

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

Main

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

Advanced

Enable disable boot option for legacy network devices.

Chipset

Host bridge parameters.

Boot

Enables/disable quiet boot option.

Security

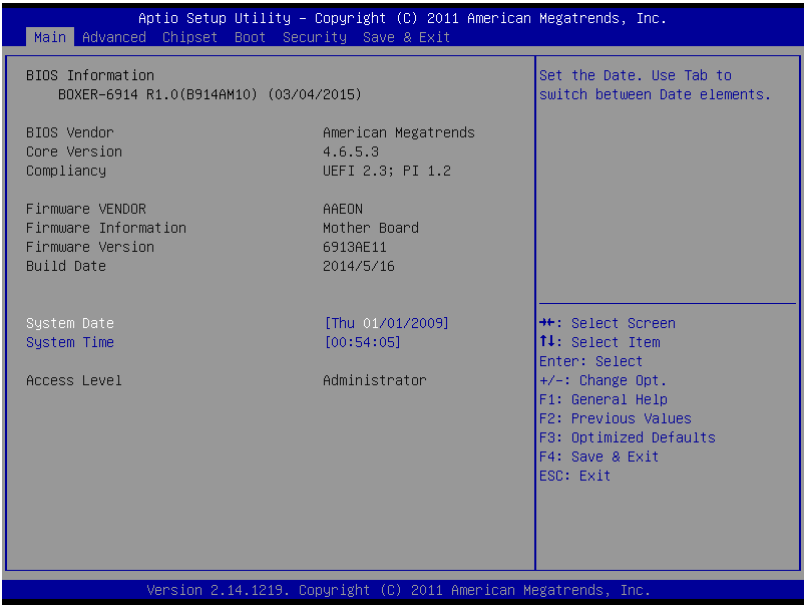
Set setup administrator password.

Save & Exit

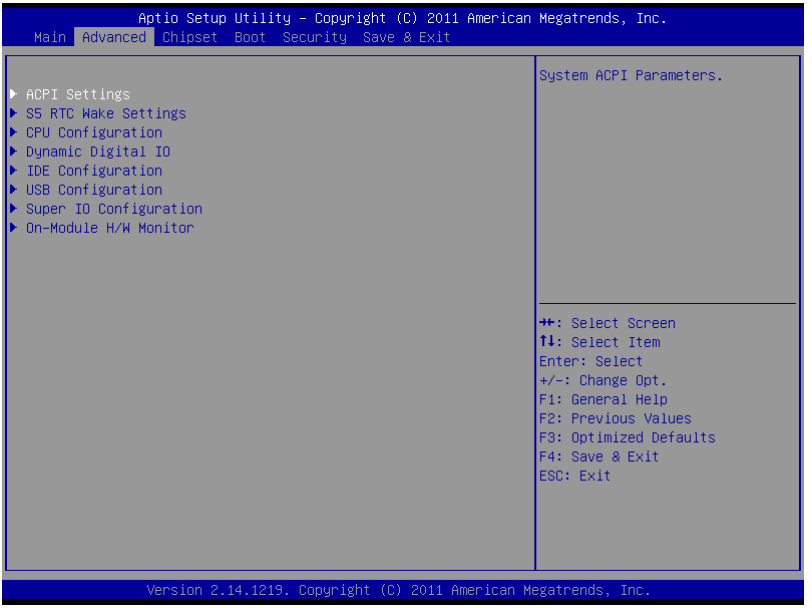
Exit system setup after saving the changes.

Setup Menu

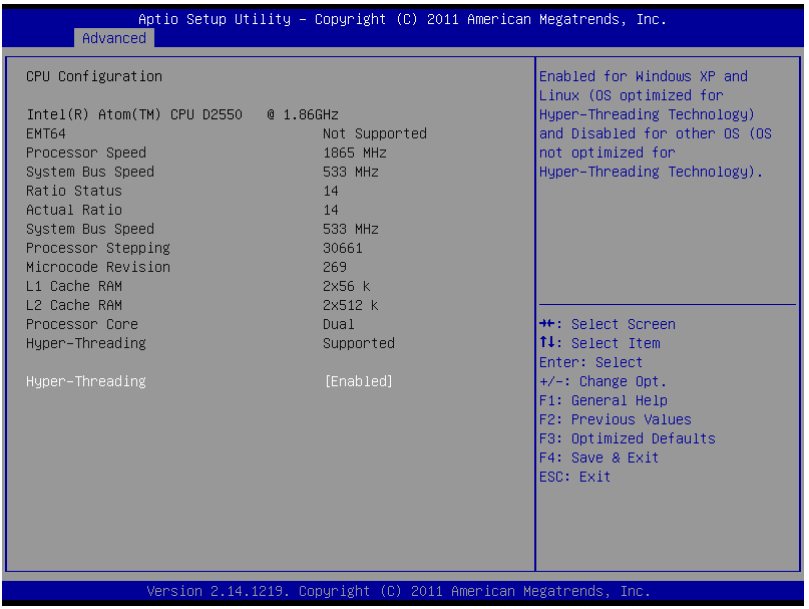
Setup submenu: Main



Setup submenu: Advanced



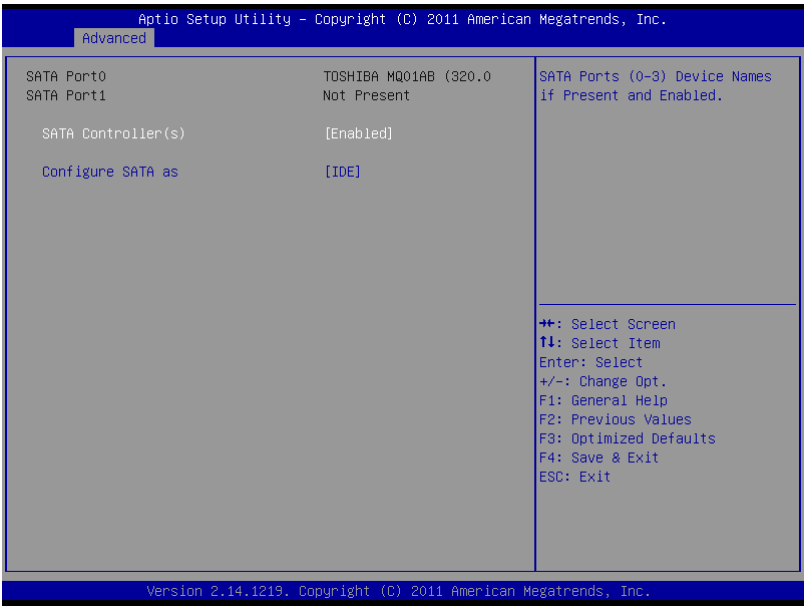
CPU Configuration



Options summary:

Hyper-Threading	Disabled	
	Enabled	Optimal Default, Failsafe Default

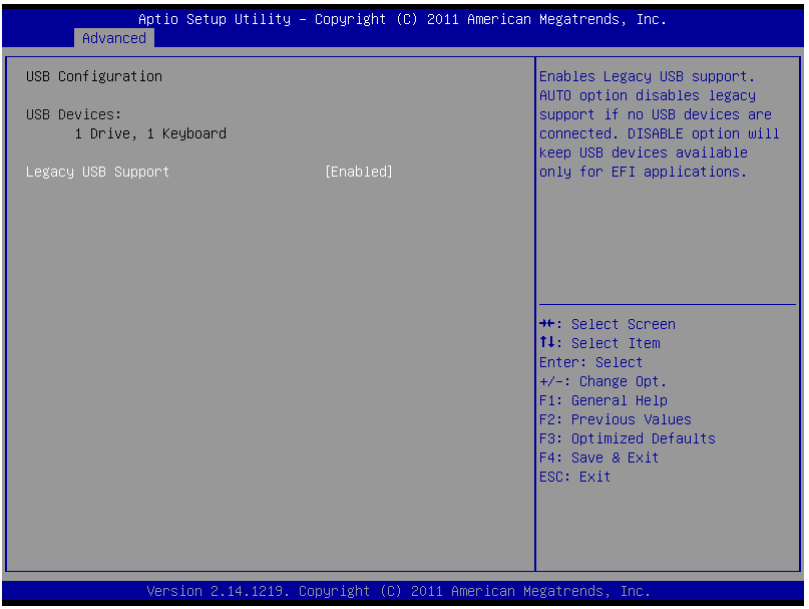
IDE Configuration (IDE)



Options summary:

SATA Controllers	Enable	Optimal Default, Failsafe Default
	Disable	
En/Disable SATA Controller		
SATA Mode	IDE	Optimal Default, Failsafe Default
	AHCI	

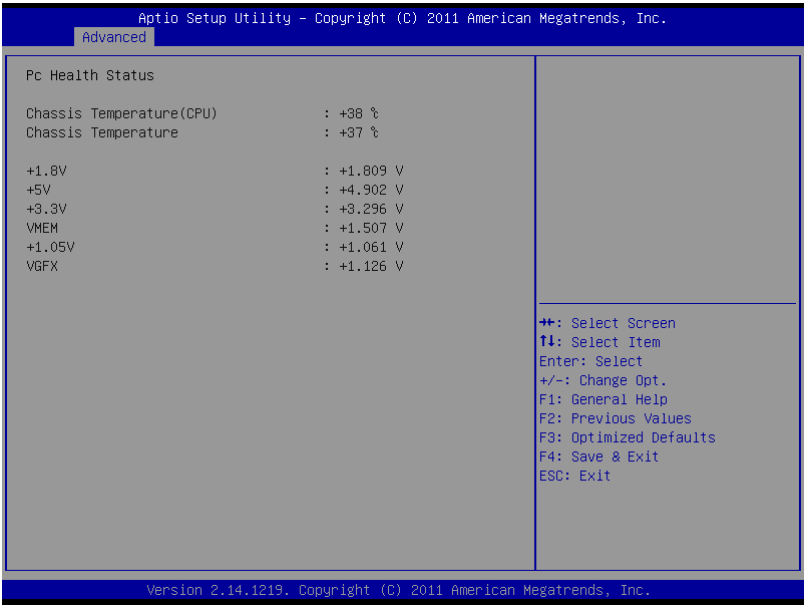
USB Configuration



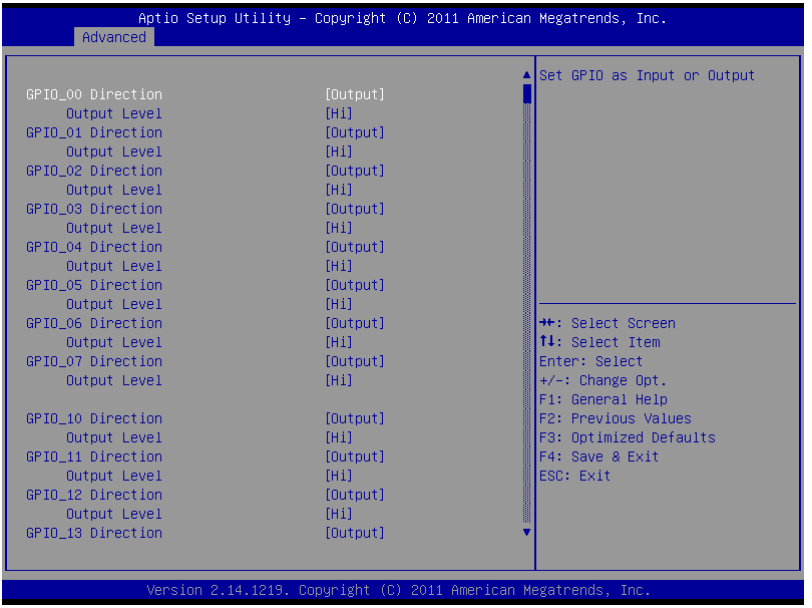
Options summary:

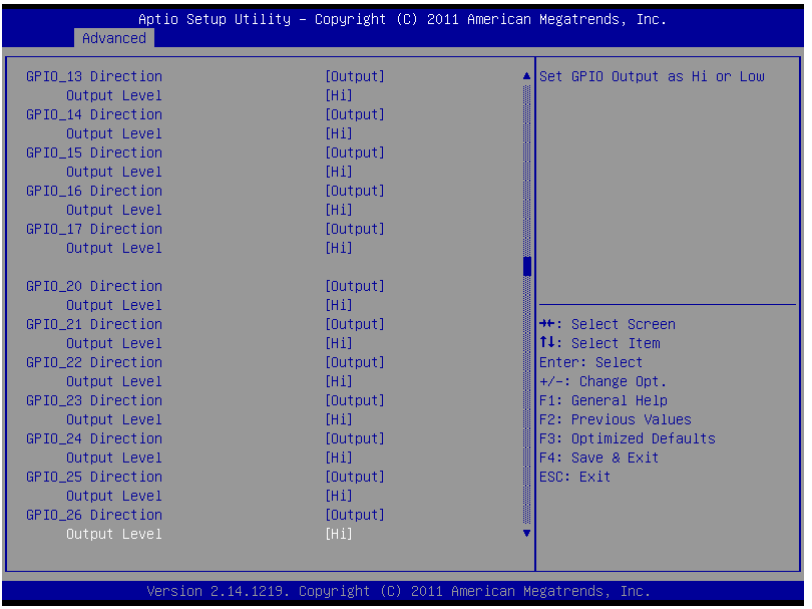
Legacy USB Support	Enable	Optimal Default, Failsafe Default
	Disable	

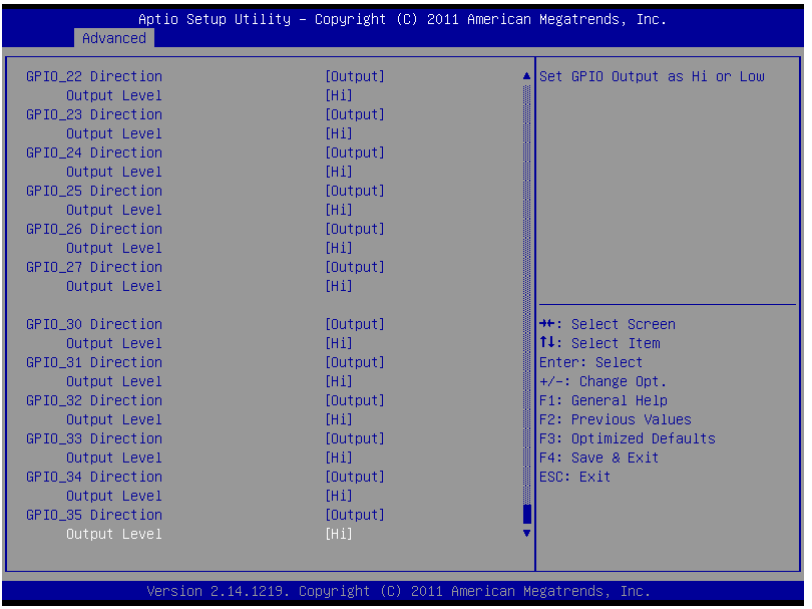
Hardware Monitor



Dynamic Digital IO Configuration



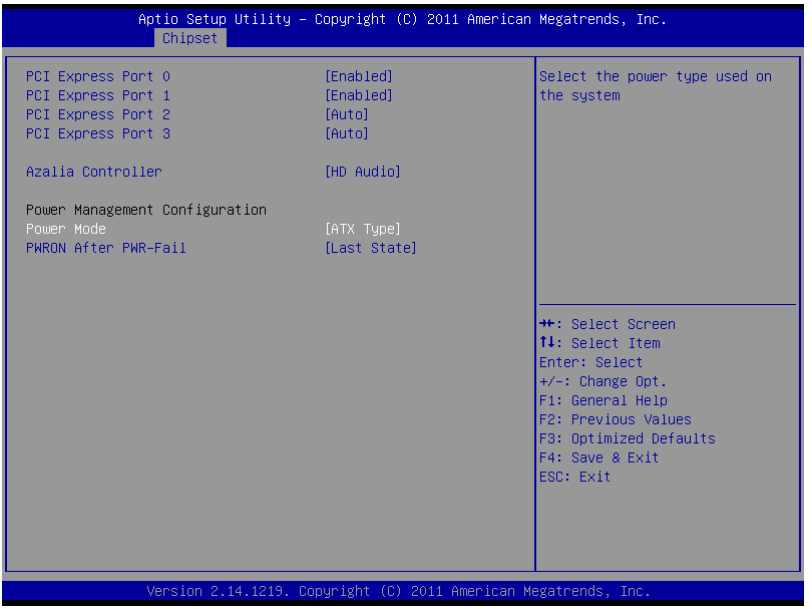

Aptio Setup Utility – Copyright (C) 2011 American Megatrends, Inc.
Advanced
GPIO_13 Direction [Output]
Output Level [Hi]
GPIO_14 Direction [Output]
Output Level [Hi]
GPIO_15 Direction [Output]
Output Level [Hi]
GPIO_16 Direction [Output]
Output Level [Hi]
GPIO_17 Direction [Output]
Output Level [Hi]
GPIO_20 Direction [Output]
Output Level [Hi]
GPIO_21 Direction [Output]
Output Level [Hi]
GPIO_22 Direction [Output]
Output Level [Hi]
GPIO_23 Direction [Output]
Output Level [Hi]
GPIO_24 Direction [Output]
Output Level [Hi]
GPIO_25 Direction [Output]
Output Level [Hi]
GPIO_26 Direction [Output]
Output Level [Hi]
Set GPIO Output as Hi or Low
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.



Options summary:

GPIO[35:0] Direction	Input	
	Output	Optimal Default, Failsafe Default
Set GPI[35:0] as Input or Output		
GPO[35:0] Output Level	Hi	Optimal Default, Failsafe Default
	Low	

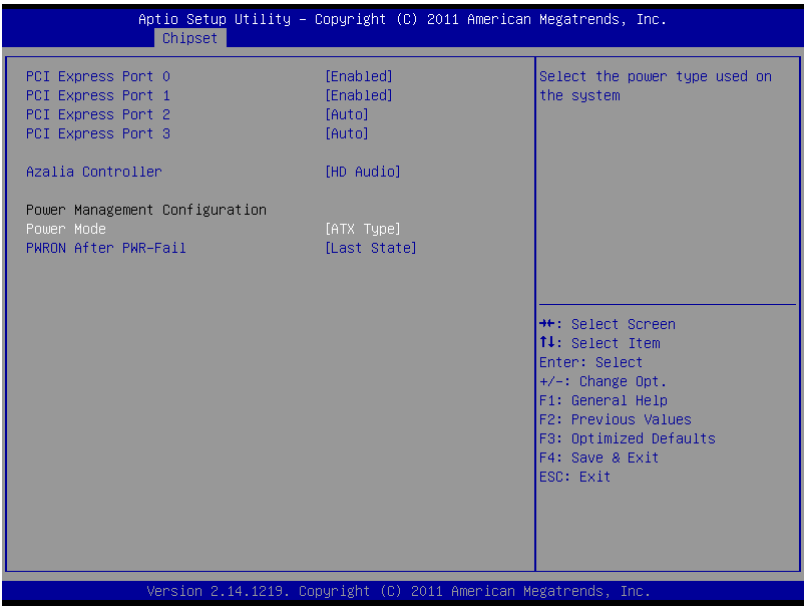
Power Management



Options summary:

Power Mode	ATX Type	Optimal Default, Failsafe Default
	AT Type	
Select power supply mode.		
Restore on Power Loss	Last State	Optimal Default, Failsafe Default
	Power On	
	Power Off	

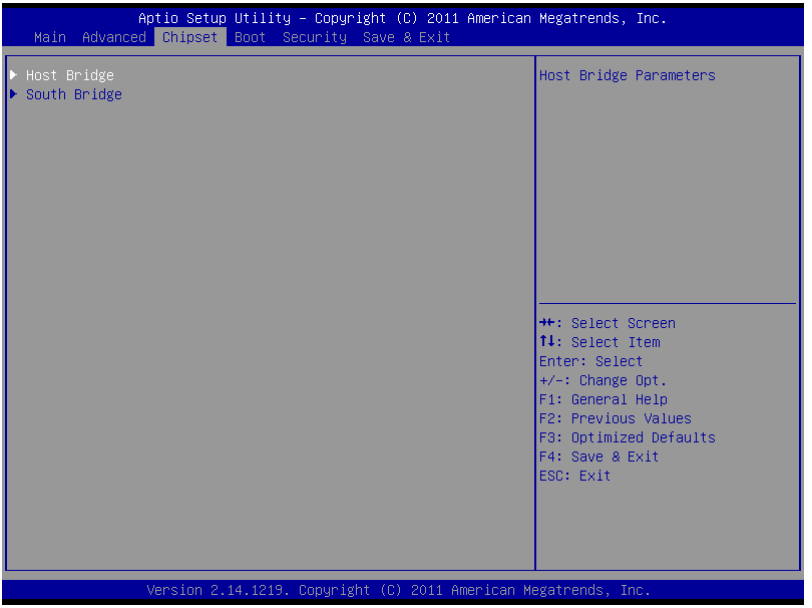
PCI Express Port Configuration



Options summary:

Use This Device	Disabled	Optimal Default, Failsafe Default
	Enabled	
	Auto	
En/Disable/Auto PCI Express Port		
PCI Express Port 0	Disable	Optimal Default, Failsafe Default
	Enable	
PCI Express Port 1	Disabled	Optimal Default, Failsafe Default
	Enabled	
PCI Express Port 2	Disabled	Optimal Default, Failsafe Default
	Enabled	
	Auto	
PCI Express Port 3	Disabled	Optimal Default, Failsafe Default
	Enabled	
	Auto	

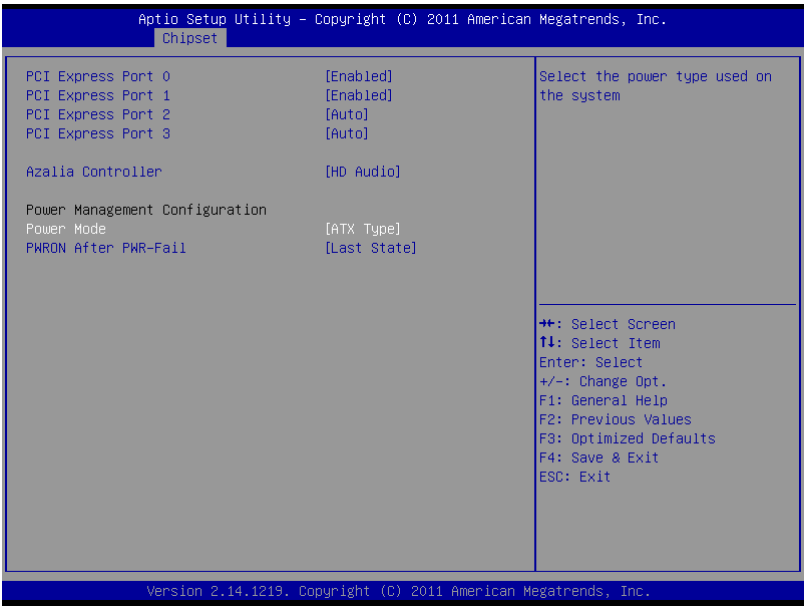
Setup submenu: Chipset



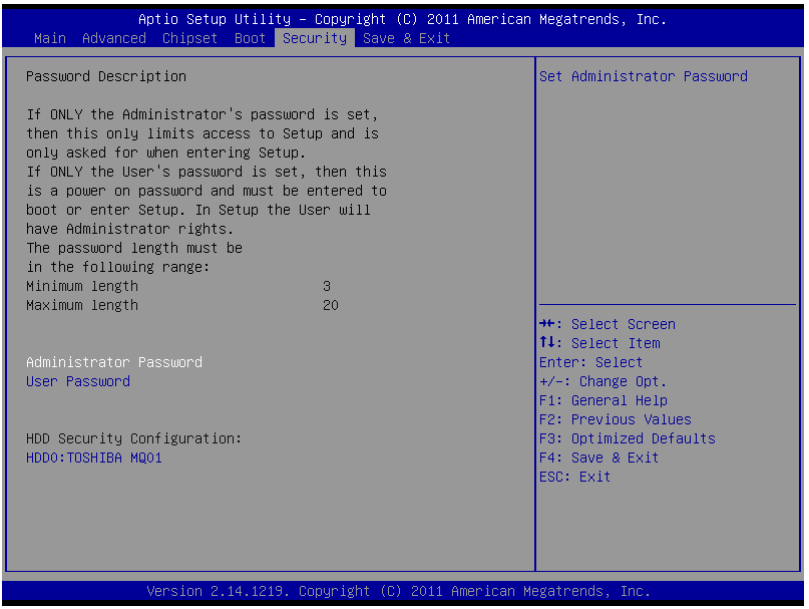
Host Bridge


Aptio Setup Utility – Copyright (C) 2011 American Megatrends, Inc.
Chipset
Intel IGD Configuration
******* Memory Information *******
Memory Frequency 1067 MHz(DDR3)
Total Memory 2048 MB
DIMM#1 2048 MB
Config Intel IGD Settings.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.

South Bridge



Security



Change User/Supervisor Password

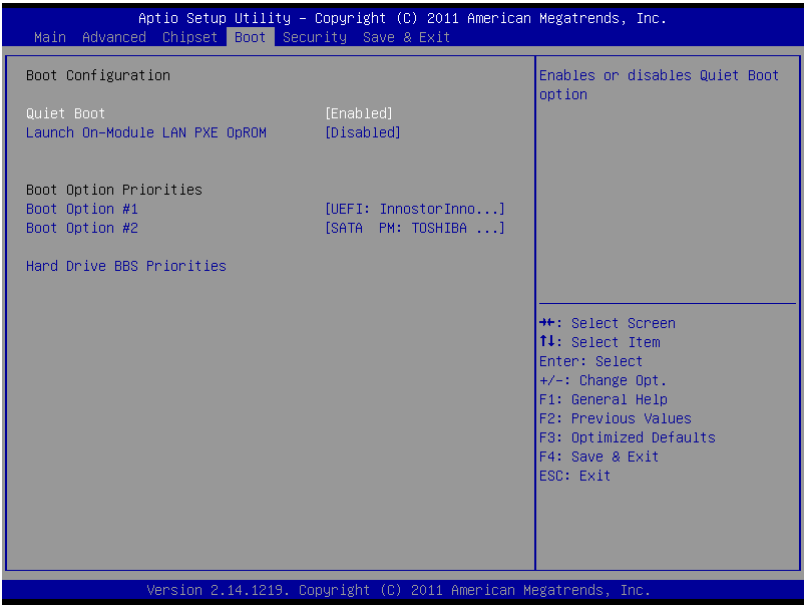
You can install a Supervisor password, and if you install a supervisor password, you can then install a user password. A user password does not provide access to many of the features in the Setup utility.

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

Removing the Password

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

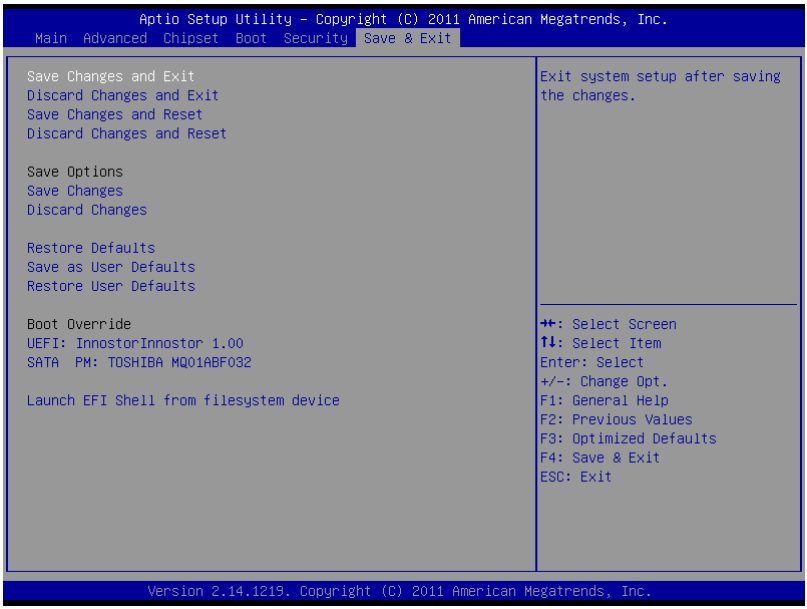
Setup submenu: Boot



Options summary:

Quiet Boot	Disabled	
	Enabled	Default
En/Disable showing boot logo.		
Option ROM Messages	Force BIOS	Default
	Keep Current	
Set display mode for Option ROM		
Launch On-Module LAN PXE OpROM	Disabled	Default
	Enabled	
En/Disable Legacy Boot Option		

Setup submenu: Exit



Chapter

4

Driver Installation

The BOXER-6914 comes with a driver disk that contains all drivers and utilities that can help you setup your product.

Insert the disk and the installation guide will start automatically. If it doesn't, please follow the sequence below to install the drivers.

Follow the sequence below to install the drivers:

Step 1 – Install Chipset Driver
Step 2 – Install VGA Driver
Step 3 – Install LAN Driver
Step 4 – Install Audio Driver
Step 5 – Install USB 3.0 Driver
Step 6 – Install AHCI Driver
Step 7 – Install F81216 Patch
Step 8 – Install F81512 Driver

Please read following instructions for detailed installations.

4.1 Installation:

Insert the BOXER-6914 driver disk into the disk drive. And install the drivers from Step 1 to Step 8 in order.

Step 1 – Install Chipset Driver

1. Open the ***Step 1 - Chipset*** folder and open the ***infinst_autol.exe*** file
2. Follow the instructions
3. Drivers will be installed automatically

Step 2 – Install VGA Driver

1. Open the ***Step 2 - VGA*** folder and select your OS

For Windows 7:

1. Open ***Setup.exe***
2. Follow the instructions
3. Drivers will be installed automatically

For Windows XP:

1. Open and install ***dotnetfx35.exe***
2. After installation completes, open ***WindowsDriverSETUP.cmd***
3. Follow the instructions
4. Drivers will be installed automatically

Step 3 – Install LAN Driver

1. Open the ***Step 3 - LAN*** folder and select your OS
2. Open the ***.exe*** file in the folder
3. Follow the instructions
4. Drivers will be installed automatically

Step 4 – Install Audio Driver

1. Open the ***Step 4 - AUDIO*** folder and select your OS
2. Open ***setup.exe***
3. Follow the instructions
4. Drivers will be installed automatically

Step 5 – Install USB3.0 Driver

1. Open the ***Step 5 – USB3.0*** folder and open ***RENESAS-USB3-Host-Driver-21160-setup*** file
2. Follow the instructions
3. Drivers will be installed automatically

Step 6 – Install AHCI Driver

1. Open the ***Step 6 - AHCI*** folder and select your OS
2. Open ***setup.exe***
3. Follow the instructions
4. Drivers will be installed automatically

Step 7 – Install F81216 Patch

1. Open the ***Step 7 – F81216 Patch*** folder and open the ***setup.exe*** file
2. Follow the instructions
3. Drivers will be installed automatically

Step 8 – Install F81512 Driver

1. Open the ***Step 8 – F81512 Driver*** folder and open the ***setup.exe*** file
2. Follow the instructions
3. Drivers will be installed automatically

Appendix

A

Programming the Watchdog Timer

A.1 Watchdog Timer Initial Program

```
ND_PROCESS MACRO
   mov    ah, 4ch
   int    21h
   ENDM

;******************** Code Segment ******************
   .MODEL    SMALL
   .CODE

begin:

   ; Set BRAM_Device as 0xA0
   mov dx, 284h
   mov al, 10h
   out dx, al
   inc dx
   mov al, 0A8h
   out dx, al

;Set BRAM_Command as 0x00 (GPIO device input/output
;access)
   dec dx
   mov al, 11h
   out dx, al
   inc dx
   mov al, 00h
   out dx, al

   ; Set BRAM_Data2 as 0xFF (WDT Counter)
   dec dx
   mov al, 15h
   out dx, al
   inc dx
   mov al, 3Ch          ;60 Sec
```

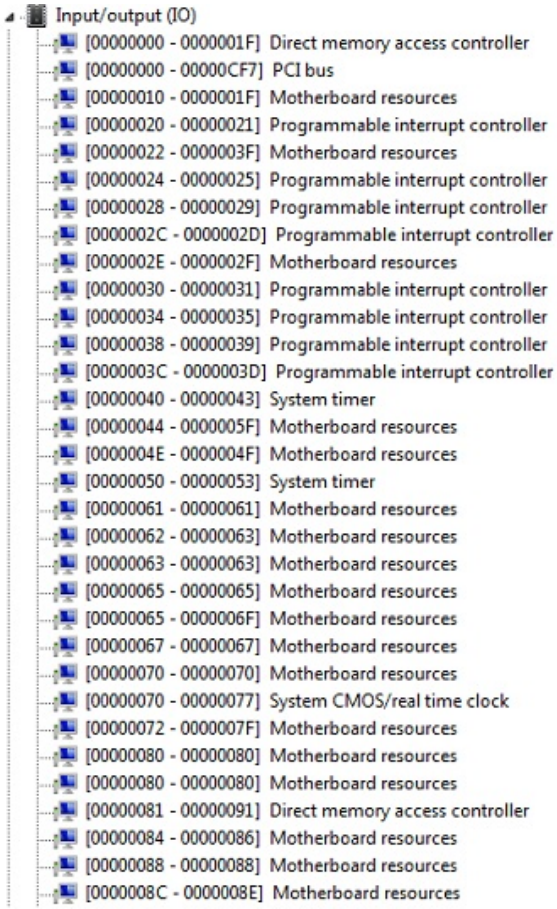
```
    out dx, al

    ; Set BRAM_Ctrl_Sts as 0x10 (Read & Start)
    dec dx
    mov al, 12h
    out dx, al
    inc dx
    mov al, 30h
    out dx, al

exit:   END_PROCESS
```

Appendix

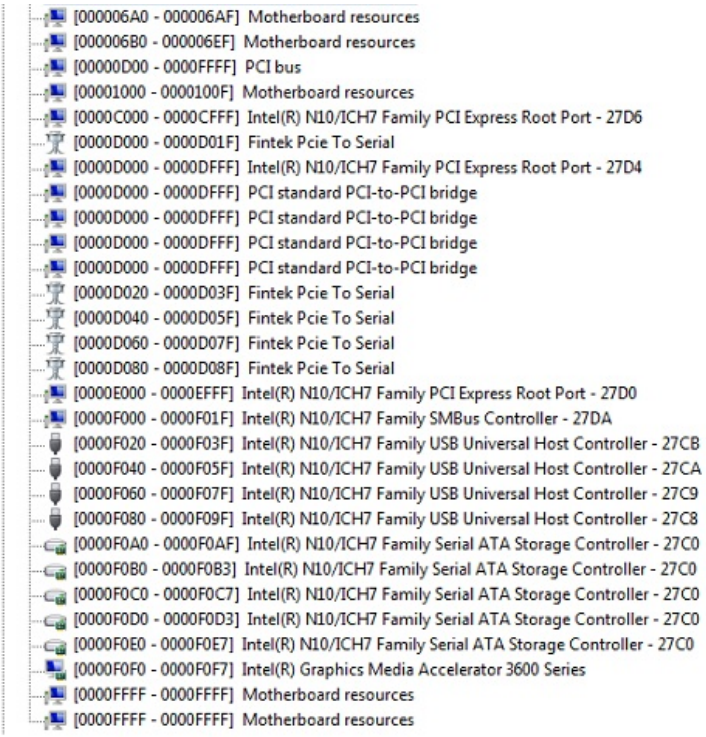
B

I/O Information

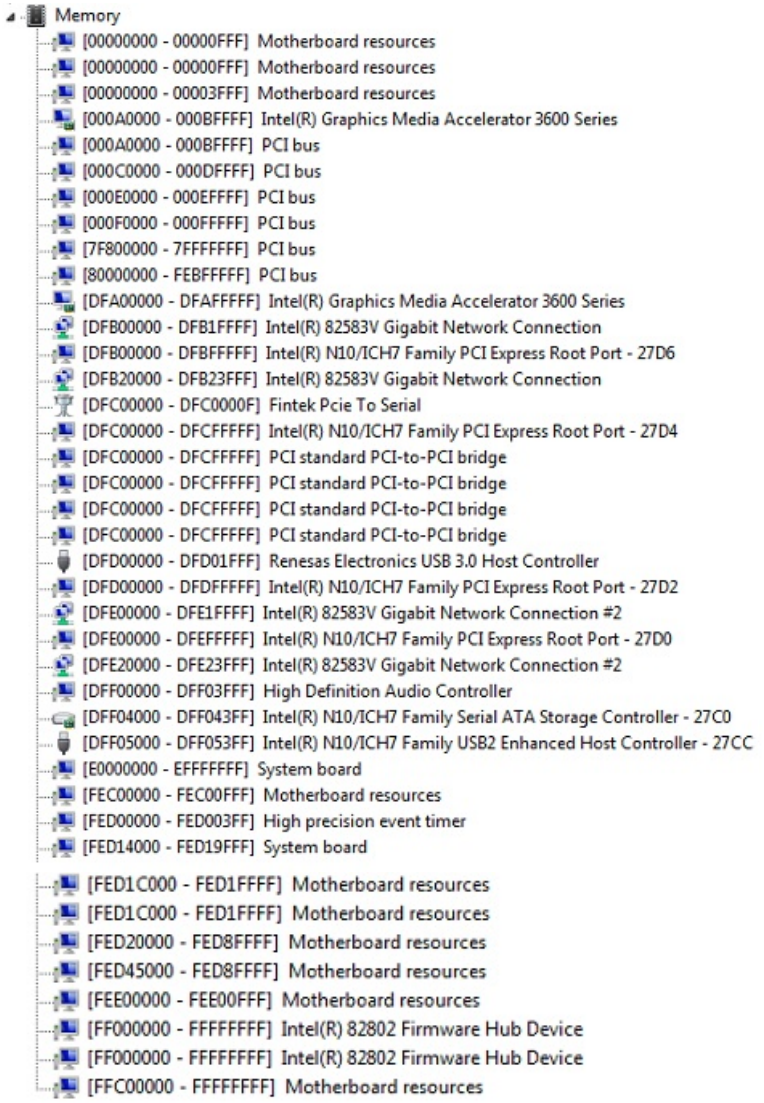
B.1 I/O Address Map



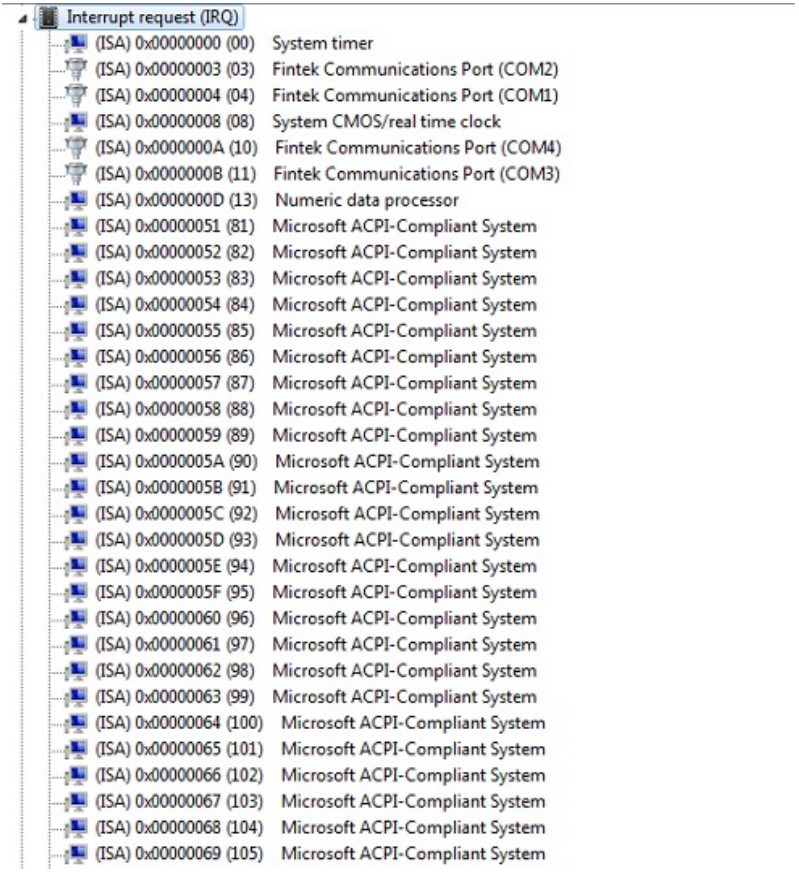
- [00000090 - 0000009F] Motherboard resources
- [00000092 - 00000092] Motherboard resources
- [00000093 - 0000009F] Direct memory access controller
- [000000A0 - 000000A1] Programmable interrupt controller
- [000000A2 - 000000BF] Motherboard resources
- [000000A4 - 000000A5] Programmable interrupt controller
- [000000A8 - 000000A9] Programmable interrupt controller
- [000000AC - 000000AD] Programmable interrupt controller
- [000000B0 - 000000B1] Programmable interrupt controller
- [000000B2 - 000000B3] Motherboard resources
- [000000B4 - 000000B5] Programmable interrupt controller
- [000000B8 - 000000B9] Programmable interrupt controller
- [000000BC - 000000BD] Programmable interrupt controller
- [000000C0 - 000000DF] Direct memory access controller
- [000000E0 - 000000EF] Motherboard resources
- [000000F0 - 000000F0] Numeric data processor
- [00000284 - 00000293] Motherboard resources
- [000002E8 - 000002EF] Fintek Communications Port (COM4)
- [000002F8 - 000002FF] Fintek Communications Port (COM2)
- [000003B0 - 000003BB] Intel(R) Graphics Media Accelerator 3600 Series
- [000003C0 - 000003DF] Intel(R) Graphics Media Accelerator 3600 Series
- [000003E8 - 000003EF] Fintek Communications Port (COM3)
- [000003F8 - 000003FF] Fintek Communications Port (COM1)
- [00000400 - 0000047F] Motherboard resources
- [00000400 - 0000047F] Motherboard resources
- [00000442 - 00000443] Motherboard resources
- [000004D0 - 000004D1] Motherboard resources
- [000004D0 - 000004D1] Programmable interrupt controller
- [00000500 - 0000053F] Motherboard resources
- [00000500 - 0000057F] Motherboard resources
- [00000600 - 0000061F] Motherboard resources
- [00000600 - 0000061F] Motherboard resources
- [00000680 - 0000069F] Motherboard resources


[000006A0 - 000006AF] Motherboard resources
[000006B0 - 000006EF] Motherboard resources
[00000D00 - 0000FFFF] PCI bus
[00001000 - 0000100F] Motherboard resources
[0000C000 - 0000CFFF] Intel(R) N10/ICH7 Family PCI Express Root Port - 27D6
[0000D000 - 0000D01F] Fintek Pcie To Serial
[0000D000 - 0000DFFF] Intel(R) N10/ICH7 Family PCI Express Root Port - 27D4
[0000D000 - 0000DFFF] PCI standard PCI-to-PCI bridge
[0000D000 - 0000DFFF] PCI standard PCI-to-PCI bridge
[0000D000 - 0000DFFF] PCI standard PCI-to-PCI bridge
[0000D000 - 0000DFFF] PCI standard PCI-to-PCI bridge
[0000D020 - 0000D03F] Fintek Pcie To Serial
[0000D040 - 0000D05F] Fintek Pcie To Serial
[0000D060 - 0000D07F] Fintek Pcie To Serial
[0000D080 - 0000D08F] Fintek Pcie To Serial
[0000E000 - 0000EFFF] Intel(R) N10/ICH7 Family PCI Express Root Port - 27D0
[0000F000 - 0000F01F] Intel(R) N10/ICH7 Family SMBus Controller - 27DA
[0000F020 - 0000F03F] Intel(R) N10/ICH7 Family USB Universal Host Controller - 27CB
[0000F040 - 0000F05F] Intel(R) N10/ICH7 Family USB Universal Host Controller - 27CA
[0000F060 - 0000F07F] Intel(R) N10/ICH7 Family USB Universal Host Controller - 27C9
[0000F080 - 0000F09F] Intel(R) N10/ICH7 Family USB Universal Host Controller - 27C8
[0000F0A0 - 0000F0AF] Intel(R) N10/ICH7 Family Serial ATA Storage Controller - 27C0
[0000F0B0 - 0000F0B3] Intel(R) N10/ICH7 Family Serial ATA Storage Controller - 27C0
[0000F0C0 - 0000F0C7] Intel(R) N10/ICH7 Family Serial ATA Storage Controller - 27C0
[0000F0D0 - 0000F0D3] Intel(R) N10/ICH7 Family Serial ATA Storage Controller - 27C0
[0000F0E0 - 0000F0E7] Intel(R) N10/ICH7 Family Serial ATA Storage Controller - 27C0
[0000F0F0 - 0000F0F7] Intel(R) Graphics Media Accelerator 3600 Series
[0000FFFF - 0000FFFF] Motherboard resources
[0000FFFF - 0000FFFF] Motherboard resources

B.2 Memory Address Map



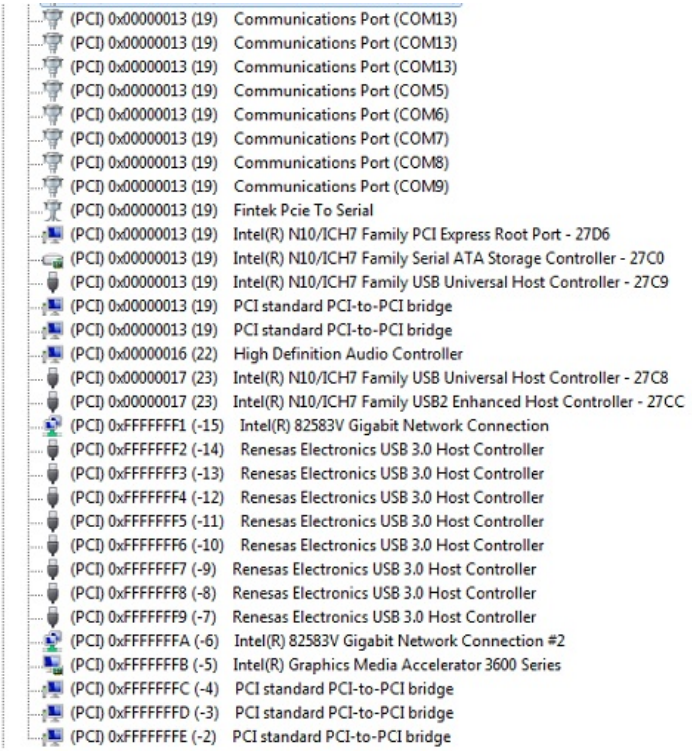
B.3 IRQ Mapping Chart



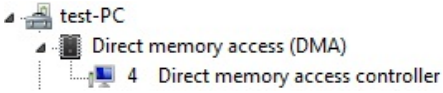
- (ISA) 0x0000006A (106) Microsoft ACPI-Compliant System
- (ISA) 0x0000006B (107) Microsoft ACPI-Compliant System
- (ISA) 0x0000006C (108) Microsoft ACPI-Compliant System
- (ISA) 0x0000006D (109) Microsoft ACPI-Compliant System
- (ISA) 0x0000006E (110) Microsoft ACPI-Compliant System
- (ISA) 0x0000006F (111) Microsoft ACPI-Compliant System
- (ISA) 0x00000070 (112) Microsoft ACPI-Compliant System
- (ISA) 0x00000071 (113) Microsoft ACPI-Compliant System
- (ISA) 0x00000072 (114) Microsoft ACPI-Compliant System
- (ISA) 0x00000073 (115) Microsoft ACPI-Compliant System
- (ISA) 0x00000074 (116) Microsoft ACPI-Compliant System
- (ISA) 0x00000075 (117) Microsoft ACPI-Compliant System
- (ISA) 0x00000076 (118) Microsoft ACPI-Compliant System
- (ISA) 0x00000077 (119) Microsoft ACPI-Compliant System
- (ISA) 0x00000078 (120) Microsoft ACPI-Compliant System
- (ISA) 0x00000079 (121) Microsoft ACPI-Compliant System
- (ISA) 0x0000007A (122) Microsoft ACPI-Compliant System
- (ISA) 0x0000007B (123) Microsoft ACPI-Compliant System
- (ISA) 0x0000007C (124) Microsoft ACPI-Compliant System
- (ISA) 0x0000007D (125) Microsoft ACPI-Compliant System
- (ISA) 0x0000007E (126) Microsoft ACPI-Compliant System
- (ISA) 0x0000007F (127) Microsoft ACPI-Compliant System
- (ISA) 0x00000080 (128) Microsoft ACPI-Compliant System
- (ISA) 0x00000081 (129) Microsoft ACPI-Compliant System
- (ISA) 0x00000082 (130) Microsoft ACPI-Compliant System
- (ISA) 0x00000083 (131) Microsoft ACPI-Compliant System
- (ISA) 0x00000084 (132) Microsoft ACPI-Compliant System
- (ISA) 0x00000085 (133) Microsoft ACPI-Compliant System
- (ISA) 0x00000086 (134) Microsoft ACPI-Compliant System
- (ISA) 0x00000087 (135) Microsoft ACPI-Compliant System
- (ISA) 0x00000088 (136) Microsoft ACPI-Compliant System
- (ISA) 0x00000089 (137) Microsoft ACPI-Compliant System
- (ISA) 0x0000008A (138) Microsoft ACPI-Compliant System

(ISA) 0x0000008B (139) Microsoft ACPI-Compliant System
(ISA) 0x0000008C (140) Microsoft ACPI-Compliant System
(ISA) 0x0000008D (141) Microsoft ACPI-Compliant System
(ISA) 0x0000008E (142) Microsoft ACPI-Compliant System
(ISA) 0x0000008F (143) Microsoft ACPI-Compliant System
(ISA) 0x00000090 (144) Microsoft ACPI-Compliant System
(ISA) 0x00000091 (145) Microsoft ACPI-Compliant System
(ISA) 0x00000092 (146) Microsoft ACPI-Compliant System
(ISA) 0x00000093 (147) Microsoft ACPI-Compliant System
(ISA) 0x00000094 (148) Microsoft ACPI-Compliant System
(ISA) 0x00000095 (149) Microsoft ACPI-Compliant System
(ISA) 0x00000096 (150) Microsoft ACPI-Compliant System
(ISA) 0x00000097 (151) Microsoft ACPI-Compliant System
(ISA) 0x00000098 (152) Microsoft ACPI-Compliant System
(ISA) 0x00000099 (153) Microsoft ACPI-Compliant System
(ISA) 0x0000009A (154) Microsoft ACPI-Compliant System
(ISA) 0x0000009B (155) Microsoft ACPI-Compliant System
(ISA) 0x0000009C (156) Microsoft ACPI-Compliant System
(ISA) 0x0000009D (157) Microsoft ACPI-Compliant System
(ISA) 0x0000009E (158) Microsoft ACPI-Compliant System
(ISA) 0x0000009F (159) Microsoft ACPI-Compliant System
(ISA) 0x000000A0 (160) Microsoft ACPI-Compliant System
(ISA) 0x000000A1 (161) Microsoft ACPI-Compliant System
(ISA) 0x000000A2 (162) Microsoft ACPI-Compliant System
(ISA) 0x000000A3 (163) Microsoft ACPI-Compliant System
(ISA) 0x000000A4 (164) Microsoft ACPI-Compliant System
(ISA) 0x000000A5 (165) Microsoft ACPI-Compliant System
(ISA) 0x000000A6 (166) Microsoft ACPI-Compliant System
(ISA) 0x000000A7 (167) Microsoft ACPI-Compliant System
(ISA) 0x000000A8 (168) Microsoft ACPI-Compliant System
(ISA) 0x000000A9 (169) Microsoft ACPI-Compliant System
(ISA) 0x000000AA (170) Microsoft ACPI-Compliant System
(ISA) 0x000000AB (171) Microsoft ACPI-Compliant System

(ISA) 0x000000AC (172) Microsoft ACPI-Compliant System
(ISA) 0x000000AD (173) Microsoft ACPI-Compliant System
(ISA) 0x000000AE (174) Microsoft ACPI-Compliant System
(ISA) 0x000000AF (175) Microsoft ACPI-Compliant System
(ISA) 0x000000B0 (176) Microsoft ACPI-Compliant System
(ISA) 0x000000B1 (177) Microsoft ACPI-Compliant System
(ISA) 0x000000B2 (178) Microsoft ACPI-Compliant System
(ISA) 0x000000B3 (179) Microsoft ACPI-Compliant System
(ISA) 0x000000B4 (180) Microsoft ACPI-Compliant System
(ISA) 0x000000B5 (181) Microsoft ACPI-Compliant System
(ISA) 0x000000B6 (182) Microsoft ACPI-Compliant System
(ISA) 0x000000B7 (183) Microsoft ACPI-Compliant System
(ISA) 0x000000B8 (184) Microsoft ACPI-Compliant System
(ISA) 0x000000B9 (185) Microsoft ACPI-Compliant System
(ISA) 0x000000BA (186) Microsoft ACPI-Compliant System
(ISA) 0x000000BB (187) Microsoft ACPI-Compliant System
(ISA) 0x000000BC (188) Microsoft ACPI-Compliant System
(ISA) 0x000000BD (189) Microsoft ACPI-Compliant System
(ISA) 0x000000BE (190) Microsoft ACPI-Compliant System
(PCI) 0x00000005 (05) Intel(R) N10/ICH7 Family SMBus Controller - 27DA
(PCI) 0x00000010 (16) Intel(R) N10/ICH7 Family PCI Express Root Port - 27D0
(PCI) 0x00000010 (16) Intel(R) N10/ICH7 Family USB Universal Host Controller - 27CB
(PCI) 0x00000011 (17) Intel(R) N10/ICH7 Family PCI Express Root Port - 27D2
(PCI) 0x00000011 (17) PCI standard PCI-to-PCI bridge
(PCI) 0x00000011 (17) PCI standard PCI-to-PCI bridge
(PCI) 0x00000011 (17) PCI standard PCI-to-PCI bridge
(PCI) 0x00000012 (18) Intel(R) N10/ICH7 Family PCI Express Root Port - 27D4
(PCI) 0x00000012 (18) Intel(R) N10/ICH7 Family USB Universal Host Controller - 27CA
(PCI) 0x00000012 (18) PCI standard PCI-to-PCI bridge
(PCI) 0x00000013 (19) Communications Port (COM10)
(PCI) 0x00000013 (19) Communications Port (COM11)
(PCI) 0x00000013 (19) Communications Port (COM12)
(PCI) 0x00000013 (19) Communications Port (COM13)



B.4 DMA Channel Assignments



Appendix

C

Programming the Digital I/O

C.1 DIO Programming

1. General Description

F75113 is a low power general purpose IO chip providing 40 GPIO. Level or pulse mode can be programmed by registers so all GPIO can be programmed to logic one, zero, high pulse or low pulse. GPIO0X~GPIO2X can be programmed to be power LED. F75113 includes two sets of watchdog timer for system reset. Besides, two power-down modes (Manual or Smart) can be selected to save power and control the total consumption under 10uA, so F75113 can fit the requirement of mobile device such as PDA or cell phone.

2. Access Interface

The F75113 provides three auto-detected access interfaces, LPC, SMBus or SPI, to read/write internal registers. In LPC interface, the default address of Configuration Register I/O port is 2Eh. When user writes data 10h to LPC configuration register 27h, the address of Configuration Register I/O port will be 4Eh. In SMBus interface, Serial Bus address default value is 6Eh (0110_1110). Another SPI interface only care the least eight bits (LSB) of 24 bits address. SPI interface write register by 02h instruction (Page Program) and read register by 03h instruction (Read Data). Also SPI interface supported byte write/read function.

Besides, the pin 46, 47, 48, 1, 2, 3, 4 are multi-function pins. If user want to access internal register by LPC interface, the F75113 will

only supported 39 GPIO function and the pin 4 won't be used for GPIO function. If user wants to access internal register by SMBus interface, the pin 48, 1, 2, 3 must be set internal pull-high with 10KΩ. When user don't use the pin 4 (GPIO function), the pin will must be set internal pull-high. In SPI interface, the pin 2, 3 must be set internal pull-high with 10KΩ. Also, the pin 4 will be selectively set internal pull-high with 10KΩ by user.

3. Register Description

When users access internal registers by LPC interface, the configuration register will be used to control the behavior of the corresponding devices. To configure the register, using the index port to select the index and then writing data port to alter the parameters. The default index port and data port are 2Eh and 2Fh respectively. Write data 10h in index 27h of global control register to change the default value to 4Eh/4Fh. To enable configuration, the entry key 50h must be written to the index port. To disable configuration, write exit key AAh to the index port. Following is an example to enable configuration and disable configuration by using debug.

-o 2e 50

-o 2e 50 (enable configuration)

-o 2e aa (disable configuration)

The Following is a register map (total devices) grouped in hexadecimal address order, which shows a summary of all registers

and their default value. Please refer each device chapter if you want more detail information.

4. GPIO Function

The F75113 with GPIO0X~GPIO4X General Purpose I/O port is composed of independent I/O pins controlled and controls multi-pin function by Index 02~06h register. Each of GPIO group has input capability, output (push-pull and open-drain) capability, internal pull-up resister with 10KΩ. Also F75113 has GPIO2x groups with the Low Level Input, LED, SMI and RSTOUT function. Please check below table how to select the GPIO multi-function pin that user wants.

Group		Pin	Function1	Condition	Function2	Condition	Function3	Condition	Function4	Condition	Pull Cap
GPIO0	0	28	GPIO00	GPIO00_MD=0	LED00	GPIO00_MD=1	SMI	GPIO00_MD=2	RSTOUT1	GPIO00_MD=3	UP
	1	27	GPIO01	GPIO01_MD=0	LED01	GPIO01_MD=1	SMI	GPIO01_MD=2	RSTOUT1	GPIO01_MD=3	UP
	2	26	GPIO02	GPIO02_MD=0	LED02	GPIO02_MD=1	SMI	GPIO02_MD=2	RSTOUT1	GPIO02_MD=3	UP
	3	25	GPIO03	GPIO03_MD=0	LED03	GPIO03_MD=1	SMI	GPIO03_MD=2	RSTOUT1	GPIO03_MD=3	UP
	4	24	GPIO04	GPIO04_MD=0	LED04	GPIO04_MD=1	SMI	GPIO04_MD=2	RSTOUT2	GPIO04_MD=3	UP
	5	23	GPIO05	GPIO05_MD=0	LED05	GPIO05_MD=1	SMI	GPIO05_MD=2	RSTOUT2	GPIO05_MD=3	UP
	6	22	GPIO06	GPIO06_MD=0	LED06	GPIO06_MD=1	SMI	GPIO06_MD=2	RSTOUT2	GPIO06_MD=3	UP
	7	21	GPIO07	GPIO07_MD=0	LED07	GPIO07_MD=1	SMI	GPIO07_MD=2	RSTOUT2	GPIO07_MD=3	UP
GPIO1	0	40	GPIO10	GPIO10_MD=0	LED10	GPIO10_MD=1					UP
	1	39	GPIO11	GPIO11_MD=0	LED11	GPIO11_MD=1					UP
	2	38	GPIO12	GPIO12_MD=0	LED12	GPIO12_MD=1					UP
	3	37	GPIO13	GPIO13_MD=0	LED13	GPIO13_MD=1					UP
	4	36	GPIO14	GPIO14_MD=0	LED14	GPIO14_MD=1					UP
	5	35	GPIO15	GPIO15_MD=0	LED15	GPIO15_MD=1					UP
	6	34	GPIO16	GPIO16_MD=0	LED16	GPIO16_MD=1					UP
	7	33	GPIO17	GPIO17_MD=0	LED17	GPIO17_MD=1					UP
GPIO2	0	16	GPIO20/LV_IN	GPIO20_MD=0	LED20	GPIO20_MD=1					UP
	1	15	GPIO21/LV_IN	GPIO21_MD=0	LED21	GPIO21_MD=1					UP
	2	14	GPIO22/LV_IN	GPIO22_MD=0	LED22	GPIO22_MD=1					UP
	3	13	GPIO23/LV_IN	GPIO23_MD=0	LED23	GPIO23_MD=1					UP
	4	12	GPIO24/LV_IN	GPIO24_MD=0	LED24	GPIO24_MD=1					UP
	5	11	GPIO25/LV_IN	GPIO25_MD=0	LED25	GPIO25_MD=1					UP
	6	10	GPIO26/LV_IN	GPIO26_MD=0	LED26	GPIO26_MD=1					UP
	7	09	GPIO27/LV_IN	GPIO27_MD=0	LED27	GPIO27_MD=1					UP
GPIO3	0	32	GPIO30								UP
	1	31	GPIO31								UP
	2	30	GPIO32								UP
	3	29	GPIO33								UP
	4	20	GPIO34								UP
	5	19	GPIO35								UP
	6	18	GPIO36								UP
	7	17	GPIO37								UP
GPIO4	0	45	GPIO40								UP
	1	44	GPIO41								UP
	2	43	GPIO42								UP
	3	42	GPIO43								UP
	4	07	GPIO44								UP
	5	06	GPIO45								UP
	6	05	SIRQ/GPIO46	Cann't use GPIO46 under LPC interface							UP
	7	04	GPIO47	Cann't use GPIO47 under LPC interface							UP

5. Hi-Safe setting DIO


AAEON
An ASUS assoc.co.
Hi-Safe
Dio
Dio Current State
Group 2
Dio9 Dio10 Dio11 Dio12 Dio13 Dio14 Dio15 Dio16
Mode
Value
Dio Setting
Dio9 Dio10 Dio11 Dio12 Dio13 Dio14 Dio15 Dio16
Mode Output Input
Value Low High
Set


AAEON
An ASUS assoc.co.
Hi-Safe
Dio
Dio Current State
Group 3
Dio17 Dio18 Dio19 Dio20 Dio21 Dio22 Dio23 Dio24
Mode
Value
Dio Setting
Dio17 Dio18 Dio19 Dio20 Dio21 Dio22 Dio23 Dio24
Mode
Output
Input
Value
Low
High
Set


A4EON
An ASUS assoc.co.
Hi-Safe
Dio
Dio Current State
Group 4
Dio25 Dio26 Dio27 Dio28 Dio29 Dio30 Dio31 Dio32
Mode
Value
Dio Setting
Dio25 Dio26 Dio27 Dio28 Dio29 Dio30 Dio31 Dio32
Mode
Output
Input
Value
Low
High
Set

BOXER-6914

嵌入式无风扇型工业控制计算机

USER'S MANUAL(中文版)

Version 1.0

版权声明

包装清单

在您打开包装后，请检查包装内如下对象是否齐全：

- BOXER-6914 整机一台
- 电源连接器一个
- 硬盘螺丝四颗
- 壁挂架螺丝四颗
- 壁挂架一组
- 驱动光盘光盘一片（内含使用手册）
- 保修证明以及合格证一套

  如果以上任何物品不齐全或者有损坏，请立刻与当地经销商或者销售代表联系。

安全与警告

1. 请仔细阅读如下安全说明。
2. 请保存好本用户手册以供日后参考。
3. 在清洁本设备之前，首先要切断所有交流电源。不要用液体或者气雾清洁剂进行清洗。请使用潮湿的棉布进行清洁。
4. 电源插座必须安装在设备附近，以方便接通电源。
5. 保持设备干燥，以防潮湿
6. 安装过程中，须将本设备放置在牢固的桌面。如果跌落会造成损坏。
7. 在接入电源之前请确认设备与电源电压等是否匹配。
8. 请将电源线绑好，以防止被踩到。不要在电源线上放置任何物体。
9. 请认真阅读设备上的任何小心和警告提示内容
10. 如果长时间不使用本设备，请断开电源线以防瞬间高压带来损伤。
11. 请不要在机器上倾倒任何液体，因为可能导致火灾或者电源短路。
12. 请不要打开本设备，出于安全的原因，只有有资格的维修人员才能打开本设备。
13. 如有以下情况发生，请专业维修人员检查本设备：
    a） 电源线或者插头损坏
    b） 有液体渗入设备内部
    c） 设备已经暴露在潮湿的环境中
    d） 设备不能正常工作，或者不能使其按照使用说明书使其运转
    e） 设备跌落或者损伤
    f） 设备有任何明显的损坏的迹象
14. 不要将设备储存在温度低于-20℃(-4° F)或者高于+80℃(158° F)的环境中，以免造成损坏。

FCC 安全警告

本设备与 Part 15 FCC 的规定相符合。任何操作都必须遵守如下两个条件：

（1） 本设备不会引起严重的干涉，

（2） 本设备必须能适应其收到的任何干涉包括会造成错误操作的干涉。

目　　录

第一章 规格介绍

1.1 BOXER-6914 无风扇型号工控机介绍

欢迎您购买研扬 BOXER-6914 系列无风扇型号工控机产品！

BOXER-6914 嵌入式控制器在目前市场上同类产品中，性能最佳的多功能模块中的一款。BOXER-6914 军工级紧凑型工业控制终端，主要技术指标包括：抗震动能力可达 5G/5~500Hz (w/CFD)；抗冲击能力可达 50G (w/CFD)；主要应用于自动售票机、闸机、工厂自动化等多个领域。

技术特色：

- 基于 Intel® Atom™ D2550 1.86 GHz 处理器的无风扇设计
- 专为节省空间而设计的單邊出線
- 专为节省空间而设计的壁挂式安装
- 支持嵌入式操作系统的应用
- 支持 CF 卡和可选得 HDD 模块
- 以太网 / 14~16 COM / 6 USB / 30 Digital I/O
- 抗振动：5grms，抗冲击：50g
- DIN-Rail 导轨或挂壁式安装
- 获得 CE/FCC A 级认证

详细规格：

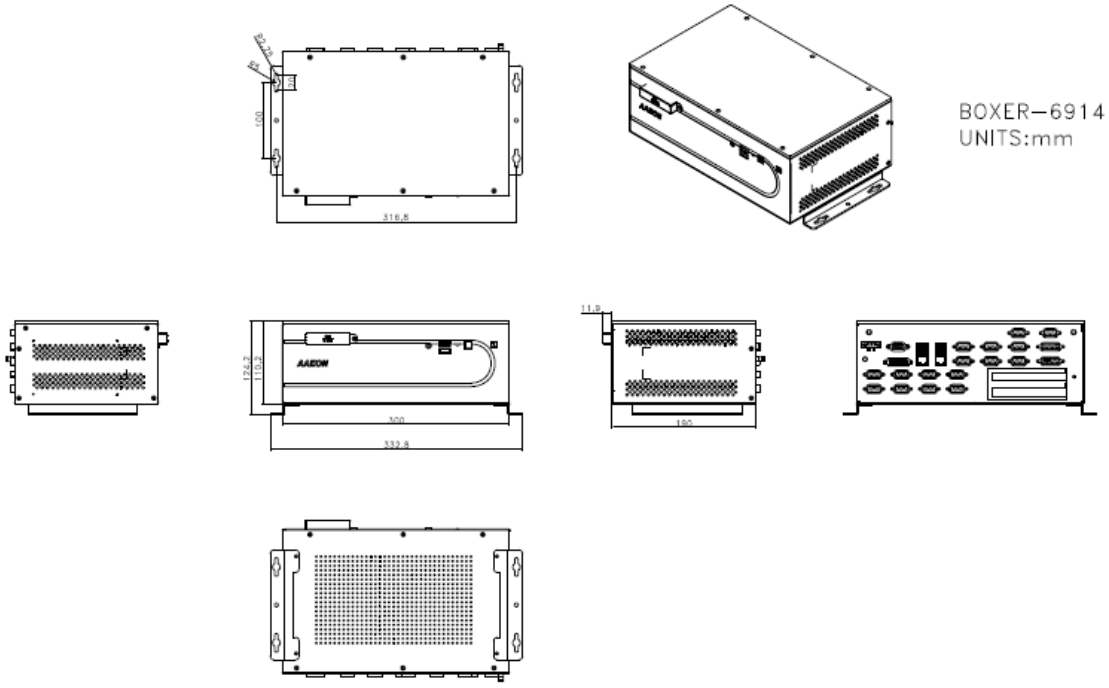
CPU	Intel® Atom™ D2550 1.86GHz 低功耗处理器
系统内存	204-pin DDR3 SO-DIMM x 2，最大 4GB（PC 800/1066 MHz）
显示端口	DB-15 x 1 VGA 连接器 DVI-D 连接器
以太网	10/100/1000 Base-TX RJ-45 连接器 x 2
磁盘驱动器	2.5” HDD/SSD bay x 1 CFast™ 插槽 x 1
串口	RS-232/422/485 x 2 RS-232 x 12 RS-232 x 2 (可选)
USB	USB3.0 端口 x 2 USB2.0 端口 x 4
TV-out	S-video 与 RCA 输出
电源	直流输入 - 内部 DC-DC 转换 30W（标准） 输入电压：9VDC~30VDC 输出电压：+5V@6A 输出功率：30W 交流输入- 外部电源适配器（该产品销售不配带电源适配器） 输入电压：100VAC~240VAC@50~60Hz 输出电压：+12V@5A 输出功率：60W
系统控制	电源按钮 x 1，重启按钮 x 1
LED 指示灯	电源指示灯 x 1，HDD 指示灯 x 1
操作系统	Windows® 7，Windows® XP，Linux Fedora (可选)
构造	铝材机箱
颜色	灰
安装	壁挂式安装套件（已配）
尺寸	332.8mm（宽）x 136.8mm（高）x 190mm（深）（13.10" x 5.39" x 7.48"）
净重	6.17lb（2.80Kg）
总重	9.70lb（4.4Kg）
工作温度	-4℉ ~ 140℉ (-20℃ ~ 60℃), with 0.5m/sec Airflow, with wide-temp CFast™ & RAM -4℉ ~ 131℉ (-20℃ ~ 55℃), with 0.5m/sec Airflow, with wide-temp HDD & RAM
工作湿度	5~95%@40℃，无冷凝
振动	非 HDD 模块：5g/5~500Hz/随机/运行状态 HDD 模块：1g/5~500Hz/随机/运行状态
冲击	非 HDD 模块：50g 峰值加速度（持续 6ms） HDD 模块：20g 峰值加速度（持续 6ms）
EMC	CE/FCC A 级

注意

1.此为 A 级产品，在生活环境中，该产品可能会造成无线电干扰。

2.用错误型号电池更换会有爆炸危险，务必按照说明处置用完的电池 若更换电池有问题,请恰研扬中国各地分公司询问

尺寸规格



1.2 可供选择的型号介绍

BOXER-6914 系列详细型号列举如下，用户可以根据自己的实际需求进行选择：

BOXER-6914-A00-1010	嵌入式控制 PC，Intel® Atom™ D2550 CPU，9-30VDC，6USB，2LAN，14COM，1VGA，1DVI，Digital I/O
BOXER-6914-A01-1010	嵌入式控制 PC，Intel® Atom™ D2550 CPU，9-30VDC，6USB，2LAN，16COM，1VGA，1DVI，Digital I/O，PCIe[x1] x1，PCI x 1
BOXER-6914-A02-1010	嵌入式控制 PC，Intel® Atom™ D2550 CPU，9-30VDC，6USB，2LAN，16COM，1VGA，1DVI，Digital I/O，PCI x 2

1.3 可供选配的配件介绍

附件选项

- **1757908401**
  84W 电源适配器
- **9761215303**
  WiFi 模块與天線
- **1702031802**
  电源线(美规)
- **1702031803**
  电源线(欧规)
- **170203180E**
  电源线(日规)

第二章　安装及使用注意事项

2.1　装箱单的核查

首先在使用前请您核对整机的实际配置是否与″研扬工控机″的装箱单一致、随机资料是否齐全，如有异议请您与销售商联系 。

主机的标准配置一般包括：

1、 主机（相关部件）及电源线

2、 随机资料和驱动盘

3、 其它可选件（显示器等）

4、 机箱附件盒

检查完毕后，将主机与显示器或其它外设联接好后，接好电源；加电、打开工控机电源开关，核查工控机运行情况。

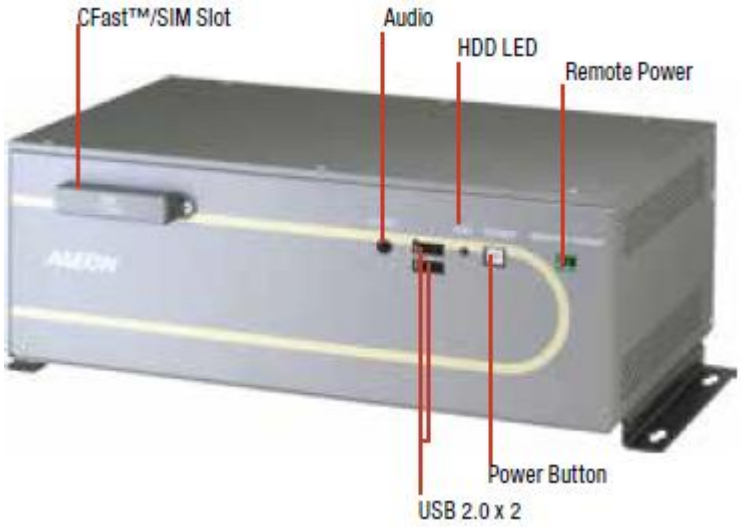
★　注意：

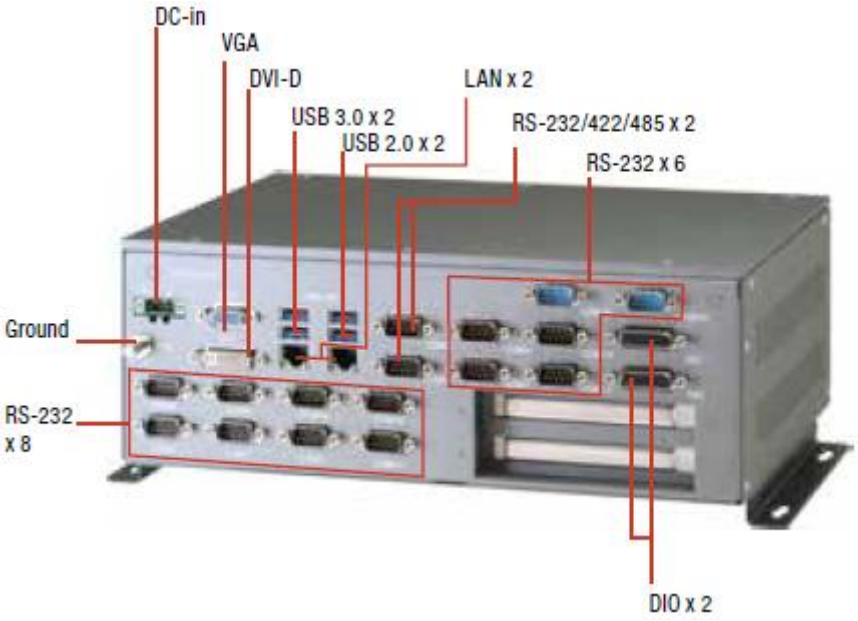
- 请不要丢掉产品原包装箱，此包装箱具有防震功能。在需要移动、运输或贮存时请使用本机的原始包装箱另返回的部件包装如不合要求将不予保修。
- 装箱单本身有保修单的功能，如另附保修单（质保书）请您在详细填写并将回执寄回研扬科技(中国)有限公司，如未附保修单（质保书）请在维修时携带装箱单以备说明。
- 请您认真阅读随机文件并妥善保管（请勿打开随机所带软盘的写保护，以避免感染病毒）

2.2　软件的安装

″研扬″工控机可支持大多数操作系统和应用软件，如 Windows® 7, Windows® XP，你可任意安装而不会产生任何兼容性问题。

2.3 前后面板接口介绍


CFast™/SIM Slot
Audio
HDD LED
Remote Power
Power Button
USB 2.0 x 2


DC-in
VGA
DVI-D
USB 3.0 x 2
USB 2.0 x 2
LAN x 2
RS-232/422/485 x 2
RS-232 x 6
Ground
RS-232
x 8
DIO x 2

2.4 硬盘模组的安装

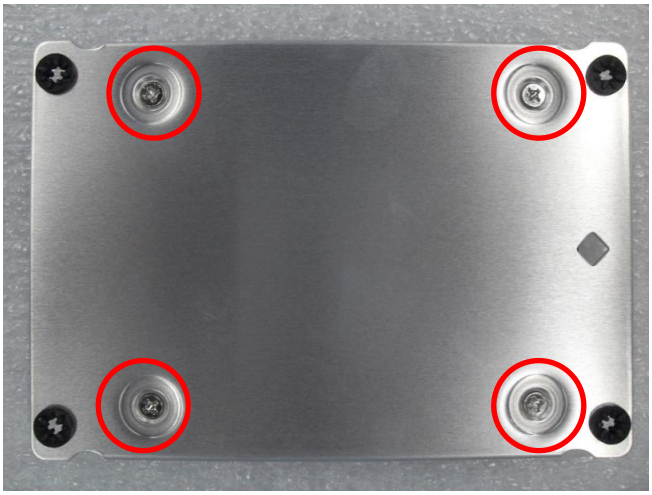
系统的安装只需一把螺丝刀，在安装前应准备好所有需要安装的零部件并把它们集中到一起。

警告：在安装 CPU 卡前机箱不能与任何电源连接，不只是将电源关掉，应将电源插头从电源插座上拔下。如果不清楚如何安装，应请富有经验的人来指导

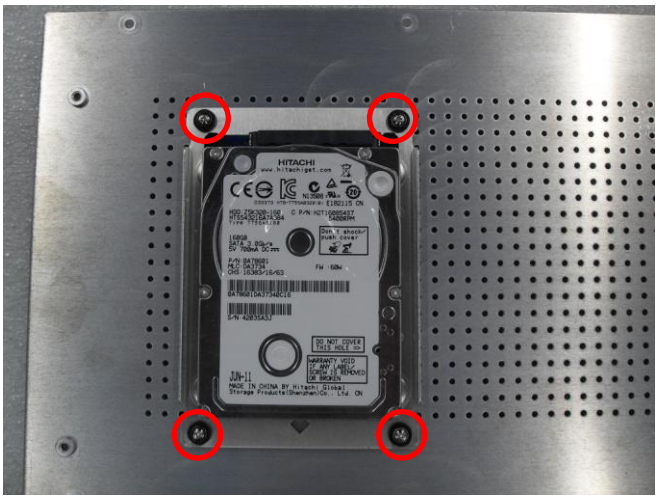
2.4.1 硬盘的组装

1. 将 2.5”硬盘放上硬盘固定架

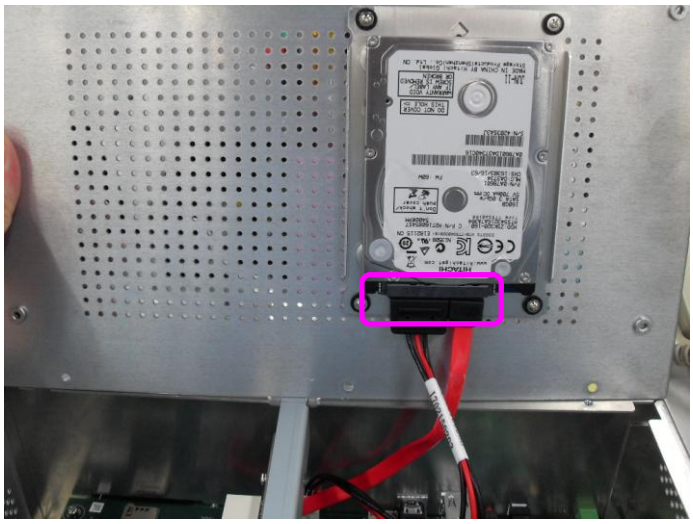
2. 将硬盘和固定架叠在一起，并使用十字起子锁上螺丝将他们固定



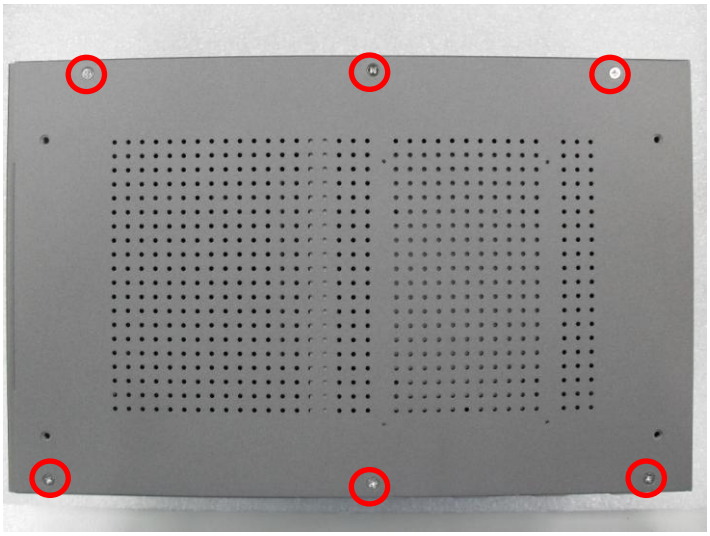
3. 将硬盘模块固定在底盖上。



4. 将排线的另一头接到 2.5” 硬盘的 pin 脚上



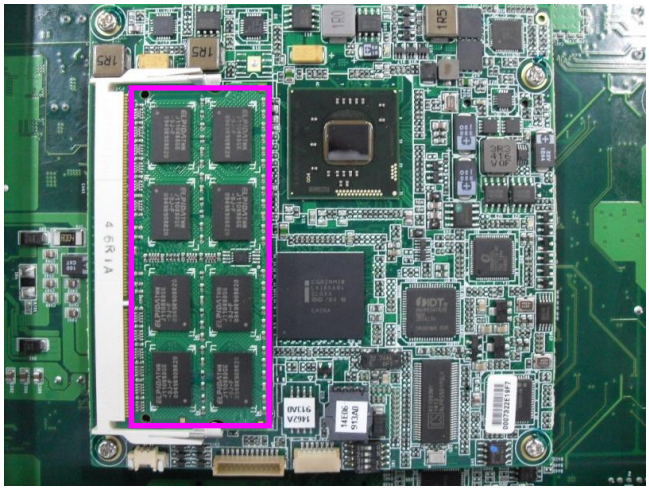
5. 采用如图方式将底盖与主机联合在一起并锁上螺丝



2.5　内容模组的安装

1. 将 Thermal Pad 贴上 M/B

2. 插上内存模块



第三章　搬运的注意事项

″研扬工控机″的机箱及主机的外包装箱均采用特殊的设计，具有防震功能，能够承受运输过程中正常的碰撞。

产品在长途运输过程中不得装在敞开的船舱或车厢中，中途转运时不得存放在露天仓库

中，在运输过程中不允许和易燃，易爆等物品共同装运，不允许被雨、雪或其它液体物质淋湿，不允许有机械损伤。贮存环境（-20 至+40℃，相对湿度 30%~85%），

如用户在使用过程中需要搬运主机，首先请妥善保护好所有仪器设备，在完成以下步骤后进行搬运动作。

- 保存好所使用的文件
- 从软盘驱动器中取出所有的软盘并妥善保管。
- 关闭工控主机电源并将电源插头从电源插座上拔下。
- 将主机与外设分开，拆下显示器电缆，拔下键盘电缆等安装在主机箱上的其它外部设备。
- 将工控主机重新包装于原始的包装箱中后即可搬运仪器设备。