AXIOMTEK

eBOX530-830-FL Series

Embedded System

User's Manual

Disclaimers

This manual has been carefully checked and believed to contain accurate information. Axiomtek Co., Ltd. assumes no responsibility for any infringements of patents or any third party's rights, and any liability arising from such use.

Axiomtek does not warrant or assume any legal liability or responsibility for the accuracy, completeness or usefulness of any information in this document. Axiomtek does not make any commitment to update the information in this manual.

Axiomtek reserves the right to change or revise this document and/or product at any time without notice

No part of this document may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of Axiomtek Co., Ltd.

January 2016, Version A2

Printed in Taiwan

Safety Precautions

Before getting started, please read the following important safety precautions.

1. The eBOX530-830-FL does not come equipped with an operating system. An operating system must be loaded first before installing any software into the computer.
2. Be sure to ground yourself to prevent static charge when installing the internal components. Use a grounding wrist strap and place all electronic components in any static-shielded devices. Most electronic components are sensitive to static electrical charge.
3. Disconnect the power cord from the eBOX530-830-FL before making any installation. Be sure both the system and the external devices are turned OFF. Sudden surge of power could ruin sensitive components. Make sure the eBOX530-830-FL is properly grounded.
4. Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.
5. Turn OFF the system power before cleaning. Clean the system using a cloth only. Do not spray any liquid cleaner directly onto the screen.
6. Do not leave this equipment in an uncontrolled environment where the storage temperature is below -20℃ or above 80℃. It may damage the equipment.
7. Do not open the system's back cover. If opening the cover for maintenance is a must, only a trained technician is allowed to do so. Integrated circuits on computer boards are sensitive to static electricity. To avoid damaging chips from electrostatic discharge, observe the following precautions:
   - Before handling a board or integrated circuit, touch an unpainted portion of the system unit chassis for a few seconds. This will help to discharge any static electricity on your body.
   - When handling boards and components, wear a wrist-grounding strap, available from most electronic component stores.

Classification

1. Degree of production against electric shock : not classified
2. Degree of protection against the ingress of water : IP40
3. Equipment not suitable for use in the presence of a flammable anesthetic mixture with air or with oxygen or nitrous oxide.
4. Mode of operation : Continuous

General Cleaning Tips

You may need the following precautions before you begin to clean the computer. When you clean any single part or component for the computer, please read and understand the details below fully.

When you need to clean the device, please rub it with a piece of dry cloth.

1. Be cautious of the tiny removable components when you use a vacuum cleaner to absorb the dirt on the floor.
2. Turn the system off before you start to clean up the component or computer.
3. Never drop the components inside the computer or get circuit board damp or wet.
4. Be cautious of all kinds of cleaning solvents or chemicals when you use it for the sake of cleaning. Some individuals may be allergic to the ingredients.
5. Try not to put any food, drink or cigarette around the computer.

Cleaning Tools:

Although many companies have created products to help improve the process of cleaning your computer and peripherals users can also use household items to clean their computers and peripherals. Below is a listing of items you may need or want to use while cleaning your computer or computer peripherals.

Keep in mind that some components in your computer may only be able to be cleaned using a product designed for cleaning that component, if this is the case it will be mentioned in the cleaning.

- Cloth: A piece of cloth is the best tool to use when rubbing up a component. Although paper towels or tissues can be used on most hardware as well, we still recommend you to rub it with a piece of cloth.
- Water or rubbing alcohol: You may moisten a piece of cloth a bit with some water or rubbing alcohol and rub it on the computer. Unknown solvents may be harmful to the plastics parts.
- Vacuum cleaner: Absorb the dust, dirt, hair, cigarette particles, and other particles out of a computer can be one of the best methods of cleaning a computer. Over time these items can restrict the airflow in a computer and cause circuitry to corrode.
- Cotton swabs: Cotton swaps moistened with rubbing alcohol or water are excellent tools for wiping hard to reach areas in your keyboard, mouse, and other locations.
- Foam swabs: Whenever possible it is better to use lint free swabs such as foam swabs.

Note ***We strongly recommended that you should shut down the system before you start to clean any single components.***

Please follow the steps below:

1. Close all application programs
2. Close operating software
3. Turn off power switch
4. Remove all device
5. Pull out power cable

Scrap Computer Recycling

If the computer equipment's need the maintenance or are beyond repair, we strongly recommended that you should inform your Axiomtek distributor as soon as possible for the suitable solution. For the computers that are no longer useful or no longer working well, please contact your Axiomtek distributor for recycling and we will make the proper arrangement.

Trademarks Acknowledgments

Table of Contents

CHAPTER 1
Introduction

This chapter contains general information and detailed specifications of the eBOX530-830-FL. The Chapter 1 includes the following sections:

- General Description
- System Specification
- Dimensions
- I/O Outlets
- Packing List
- Model List

1.1 General Description

The eBOX530-830-FL is an embedded system that supports onboard dual core Intel® Atom™ processor N2600 (1.6GHz) processor to provide Windows 7, Windows 7 Embedded or Linux, suitable for the most endurable operation.

It features fanless design with full feature I/O, one 204-pin unbuffered SODIMM socket for singe channel DDR3-800/1066 MHz memory, and enhanced system dependability by built-in Watchdog Timer.

- **Features**
  1. Intel® NM10 chipset
  2. Support Intel® Atom™ Processor N2600 (1.6GHz)
  3. Maximum to 2GB DDR3 800MHz memory
  4. Ultra slim and compact design
  5. Supports four USB 2.0 ports
  6. Supports one RS-232/422/485 and one RS-232
  7. Supports dual 10/100/1000Mbps Ethernet port
  8. One 2.5" SATA HDD drive bay
  9. One front access CFast
  10. Watchdog timer
  11. 25W AC-DC Adapter
  12. Din-rail mount (optional)
  13. VESA mount (optional)

- **Reliable and Stable Design**
  The eBOX530-830-FL adopts the advanced cooling system and supporting the CFast™, which makes it especially suitable for vibration environments, best for industrial automation, digital signage, energy and gaming application.

- **Embedded O.S. Supported**
  The eBOX530-830-FL not only supports Windows 7, Windows Vista, but also supports embedded OS, such as Windows 7 Embedded.

- **Various Storage devices supported**
  For storage device, the eBOX530-830-FL supports one 2.5" SATA storage drive bay, and one CFast™ slot.

1.2 System Specifications

1.2.1 CPU

- **CPU**
  - Intel® Atom™ dual core N2600 1.6 GHz

- **Chipset**
  - Intel® NM10 chipset

- **BIOS**
  - American Megatrends Inc. UEFI (Unified Extensible Firmware Interface) BIOS.
  - 16Mbit SPI Flash, DMI, Plug and Play.
  - RPL/PXE Ethernet Boot ROM.

- **System Memory**
  - One 204-pin unbuffered DDR3 SO-DIMM socket.
  - Maximum to 2GB DDR3 800MHz memory for N2600.

1.2.2 System I/O

- Two 9-pin D-Sub male connectors, COM1 for RS-232/422/485, COM2 for RS-232
- One 15-pin D-Sub female connector for VGA (eBOX530-830-VGA-FL), optional for one DisplayPort (eBOX530-830-PGA-FL).
- Two Audio connector (Mic-IN, Line-OUT)
- One RJ-45 connector for 10/100/1000Base-T Ethernet
- Four USB 2.0 connectors
- One 5V DC Jack for power input connector
- One Reset Button
- Two Indicators (System Power, HDD Active)

1.2.3 System Specification

- **Watchdog Timer**
  1~255 seconds or minutes; up to 255 levels.
- **Power Supply**
  External 5V@5A, 25W AC/DC power adapter
- **Operation Temperature**
  -10℃ ~ 50℃ (14 ºF ~ 122ºF), N2600 with W.T. SSD
- **Storage Temperature**
  -20℃ ~ 80℃ (-4 ºF ~ 176ºF)
- **Humidity**
  10% ~ 90% (non-condensation)

- **Vibration Endurance**

  3Grm w/ CFast (5-500Hz, X, Y, Z directions)

  3Grm w/ SSD (5-500Hz, X, Y, Z directions)

- **Weight**

  0.5 kg (1.1 lb) without package

- **Dimensions**

  132mm(5.19") (W) x 95.4mm(3.75") (D) x 47.5mm(1.87") (H)

1.2.4 Driver CD Content

- **Driver**
  - Chipset and graphics driver
  - Ethernet driver
  - Audio driver
  - Unify API for hardware monitor and watchdog timer
- **Manual**
  - User Manual
  - Quick Manual

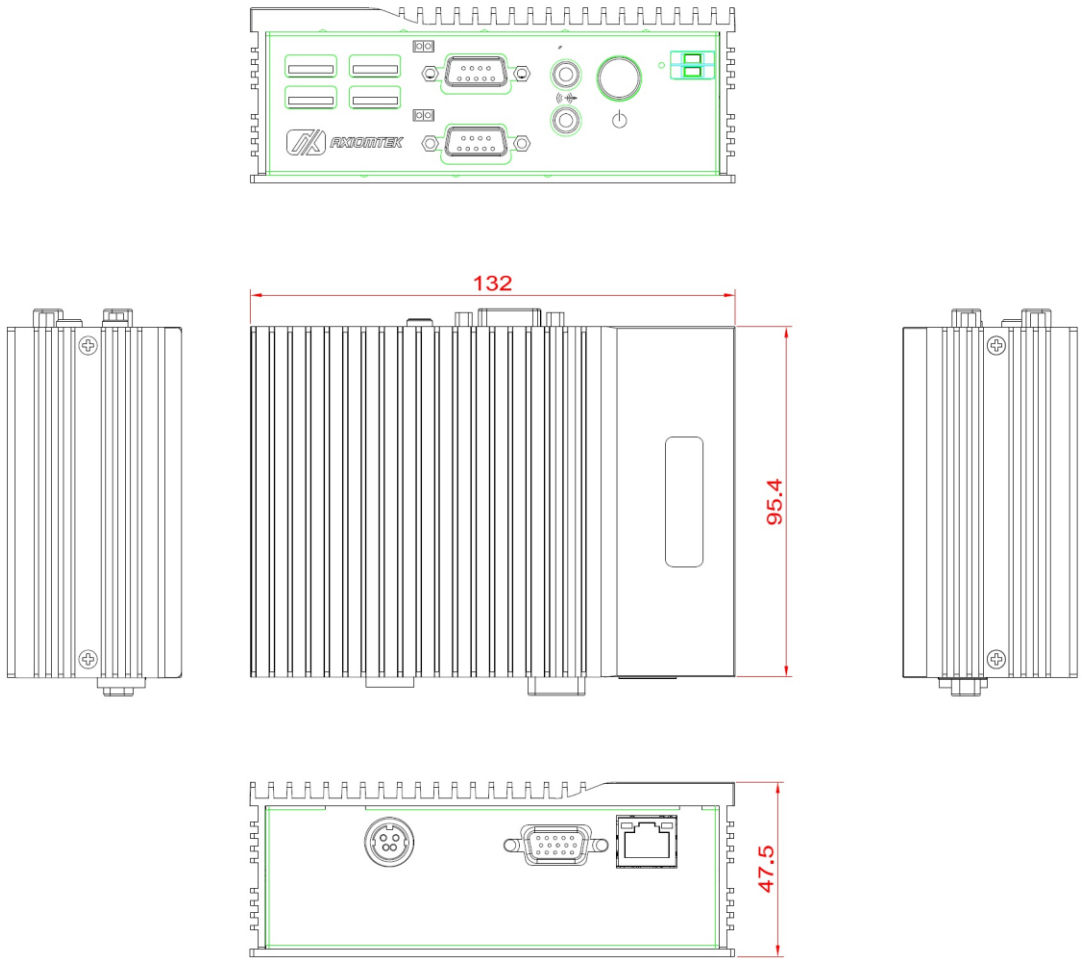
NOTE: All specifications and images are subject to change without notice.

1.3 Dimensions

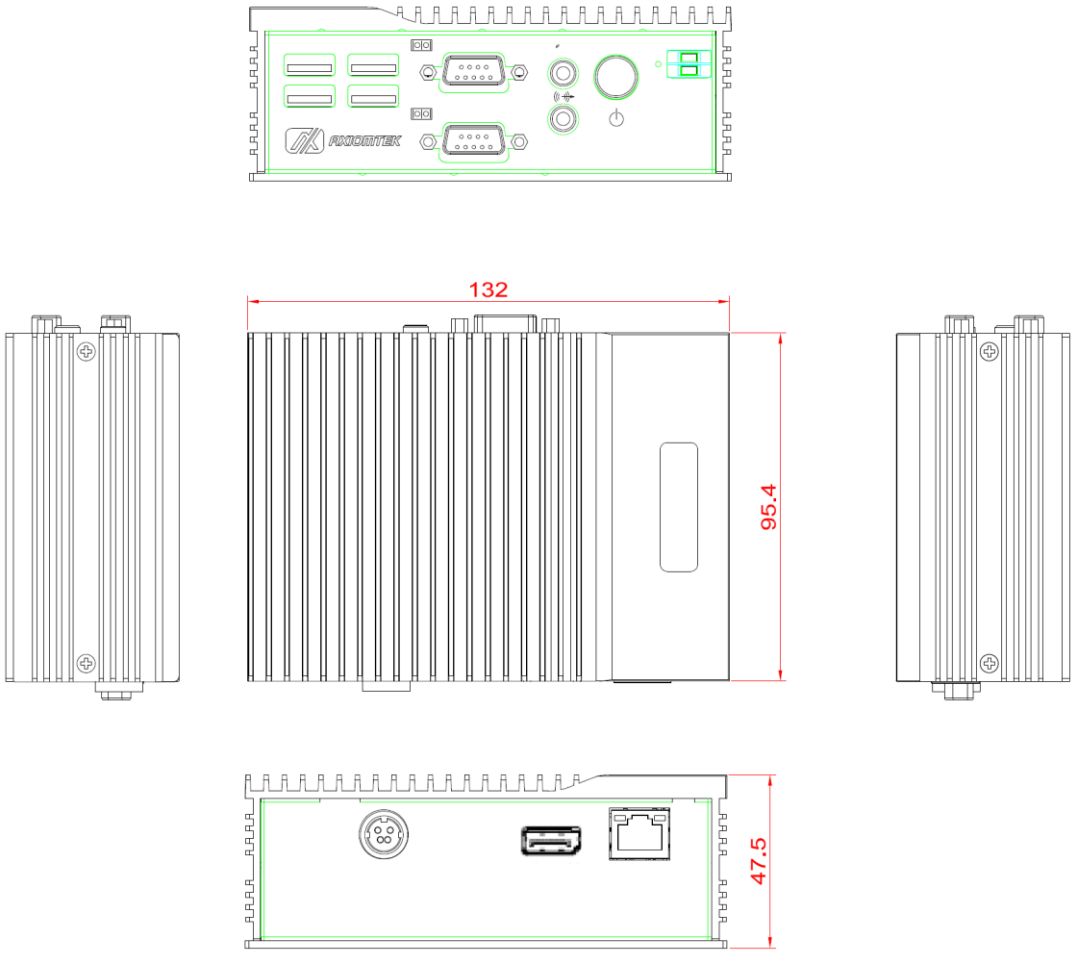
The following diagrams show you dimensions and outlines of the eBOX530-830-FL.

1.3.1 eBOX530-830-VGA-FL

The following diagrams show you dimensions and outlines of the eBOX530-830-VGA-FL.



1.3.2 eBOX530-830-PGA-FL

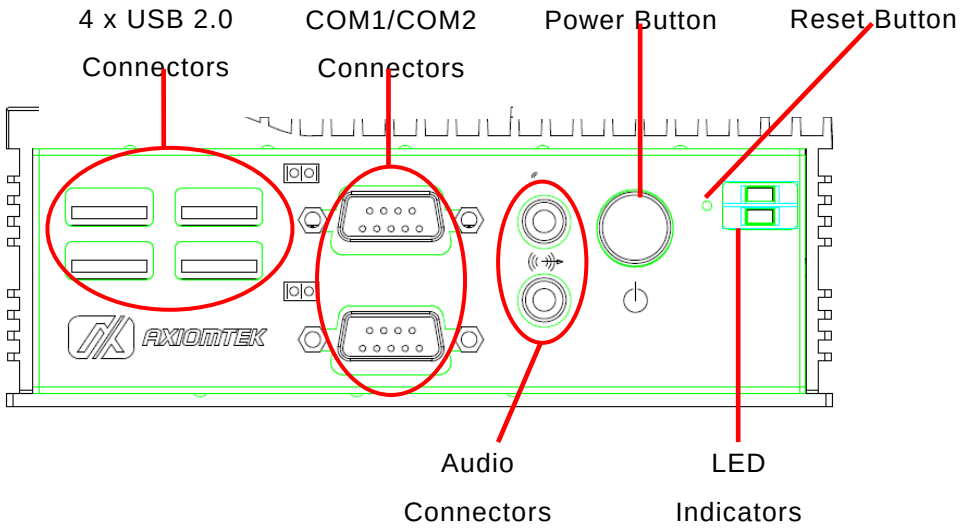


1.4 I/O Outlets

The following figures show you I/O outlets on front view of the eBOX530-830-FL.

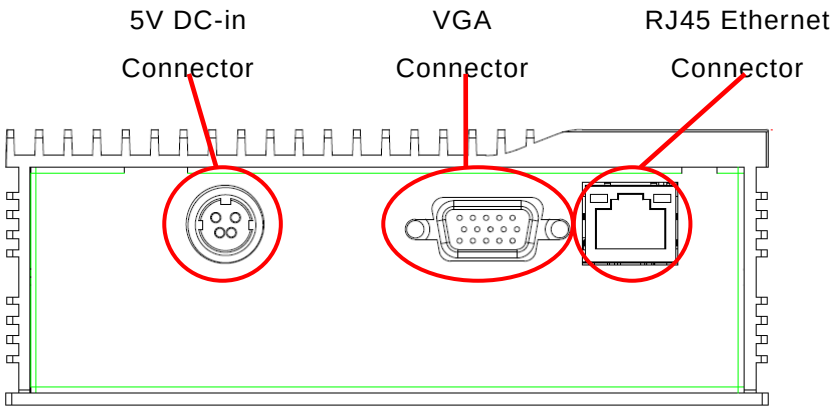
- **Front View**

- **Front View drawing**

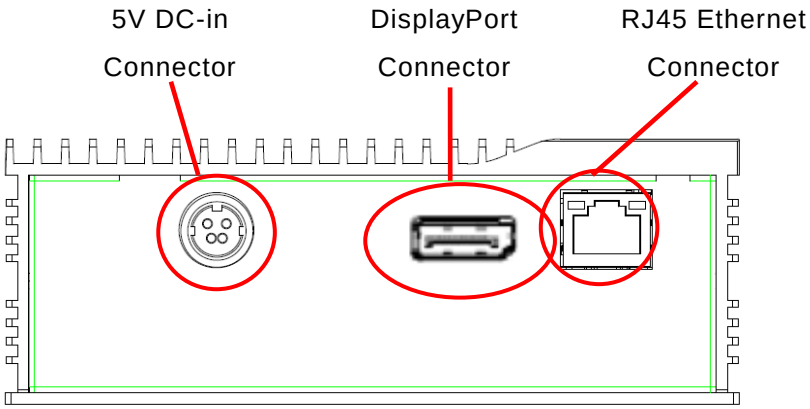


- **Rear View**

- **Rear View drawing (eBOX530-830-VGA-FL)**



- **Rear View drawing (eBOX530-830-PGA-FL)**



1.5 Packing List

The package bundled with your eBOX530-830-FL should contain the following items:

- eBOX530-830-FL System Unit x 1
- eBOX530-830-FL Quick Manual x 1
- CD x 1 (For Driver and User's Manual)
- Screws Pack x1
- Foot Pad x4
- 25W AC-DC Adapter
- VESA-mount Bracket (optional)
- Din-rail Bracket (optional)
- 2.5" SATA Storage (optional)
- CFast™ card (optional)
- DDR3 SODIMM (optional)

1.6 Model List

eBOX530-830-FL-N2600-1.6G-VGA-US-ATX	Fanless embedded system with Intel® ATOM® N2600 1.6GHz dual core processor, VGA, US power cord, ATX mode
eBOX530-830-FL-N2600-1.6G-VGA-EU-ATX	Fanless embedded system with Intel® ATOM® N2600 1.6GHz dual core processor, VGA, EU power cord, ATX mode
eBOX530-830-FL-N2600-1.6G-VGA-US-AT	Fanless embedded system with Intel® ATOM® N2600 1.6GHz dual core processor, VGA, US power cord, AT mode
eBOX530-830-FL-N2600-1.6G-VGA-EU-AT	Fanless embedded system with Intel® ATOM® N2600 1.6GHz dual core processor, VGA, EU power cord, AT mode
eBOX530-830-FL-N2600-1.6G-PGA-US-ATX	Fanless embedded system with Intel® ATOM® N2600 1.6GHz dual core processor, DisplayPort, US power cord, ATX mode
eBOX530-830-FL-N2600-1.6G-PGA-EU-ATX	Fanless embedded system with Intel® ATOM® N2600 1.6GHz dual core processor, DisplayPort, EU power cord, ATX mode
eBOX530-830-FL-N2600-1.6G-PGA-US-AT	Fanless embedded system with Intel® ATOM® N2600 1.6GHz dual core processor, DisplayPort, US power cord, AT mode
eBOX530-830-FL-N2600-1.6G-PGA-EU-AT	Fanless embedded system with Intel® ATOM® N2600 1.6GHz dual core processor, DisplayPort, EU power cord, AT mode

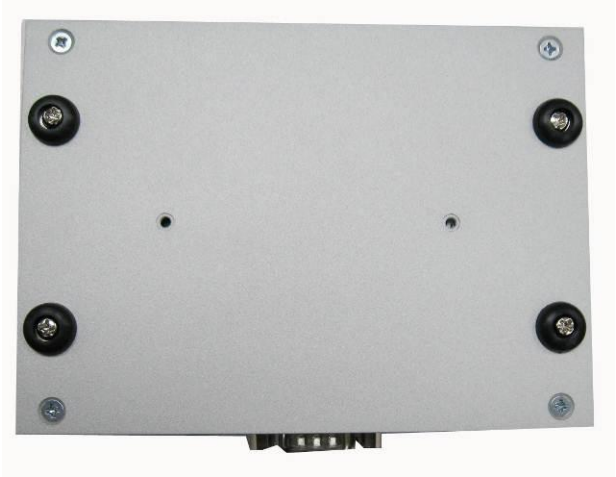
If you cannot find this package or any items are missing, please contact Axiomtek distributors immediately.

CHAPTER 2
Hardware Installation

The eBOX530-830-FL is convenient for your various hardware configurations, such as Memory Module, HDD (Hard Disk Drive), SSD (Solid State Drive) and CFast™ card. The chapter 2 will show you how to install the hardware.

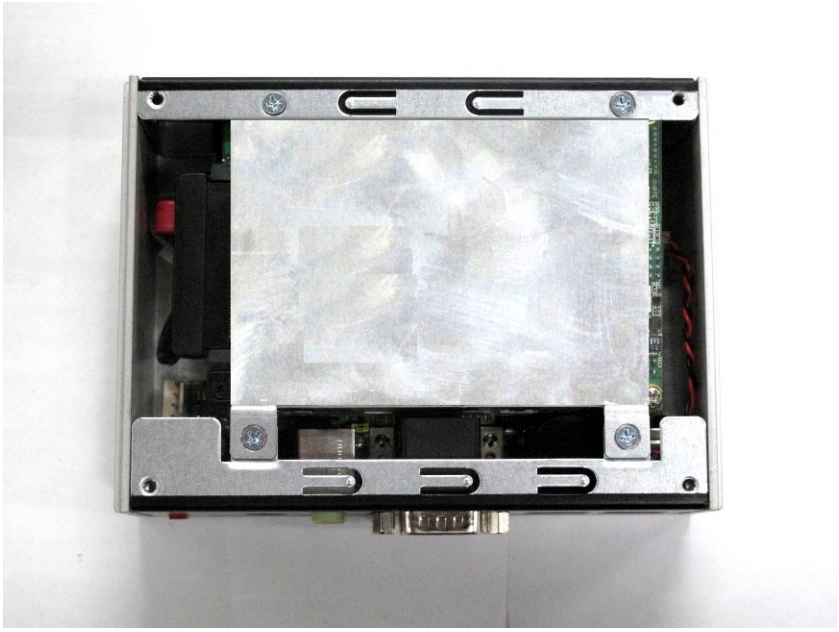
2.1 Installing Memory Module

Step 1 Turn off the system, and unplug the power cord.
Step 2 Turn the system upside down to locate screws at the bottom

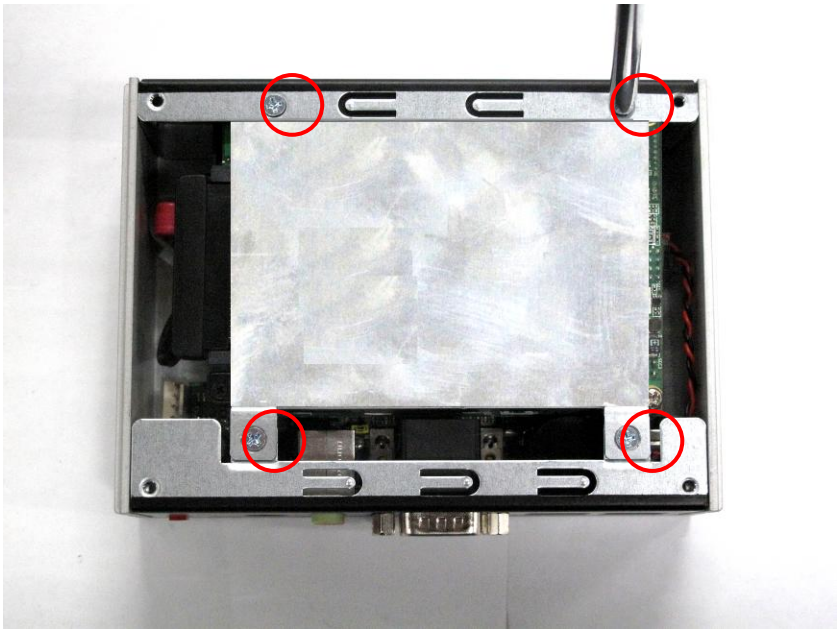


Step 3 Loosen screws of bottom cover.

Step 4 Remove the bottom cover

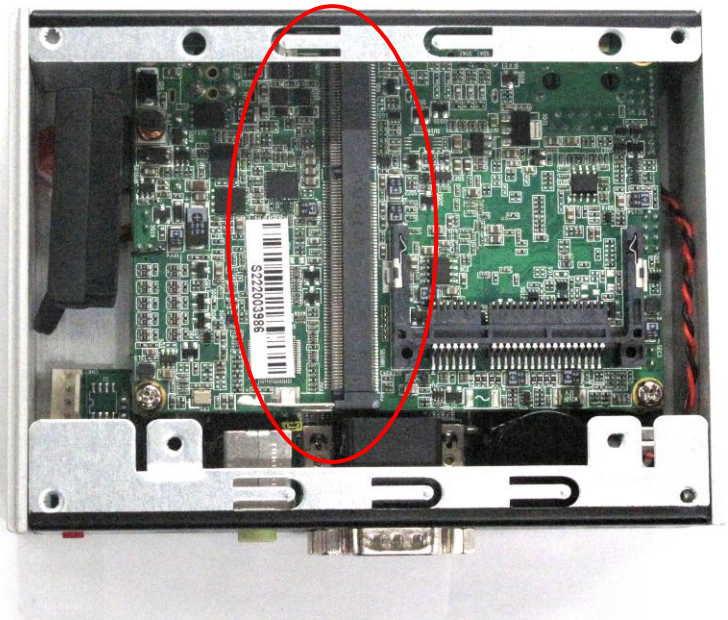


Step 5 Loosen screws of HDD bracket

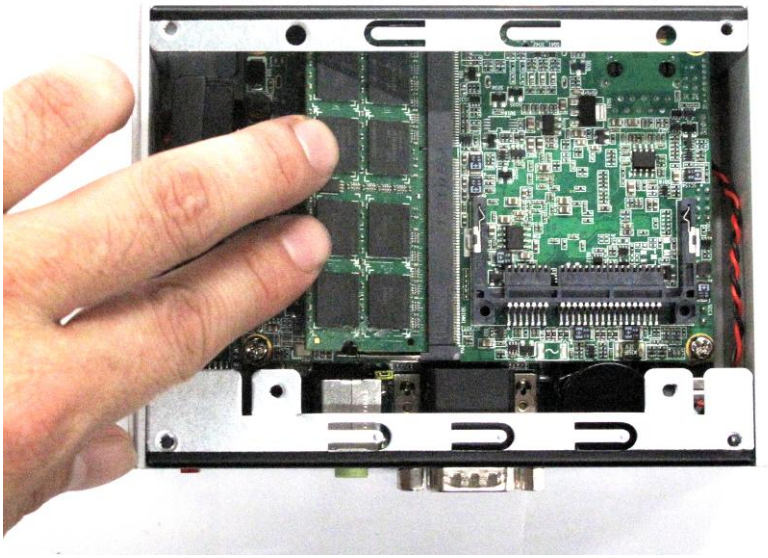


Step 6 emove the HDD bracket

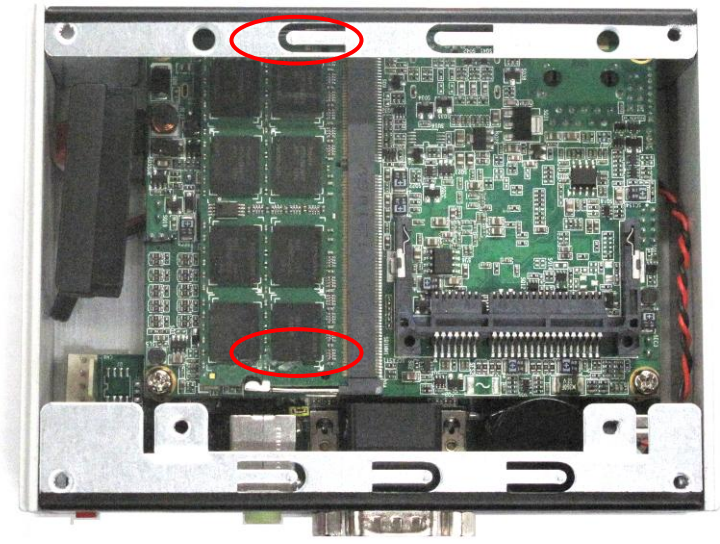
Step 7 Locate the memory module as marked.



Step 8 Hold one side of the module, and insert the gold colored contact into the socket.

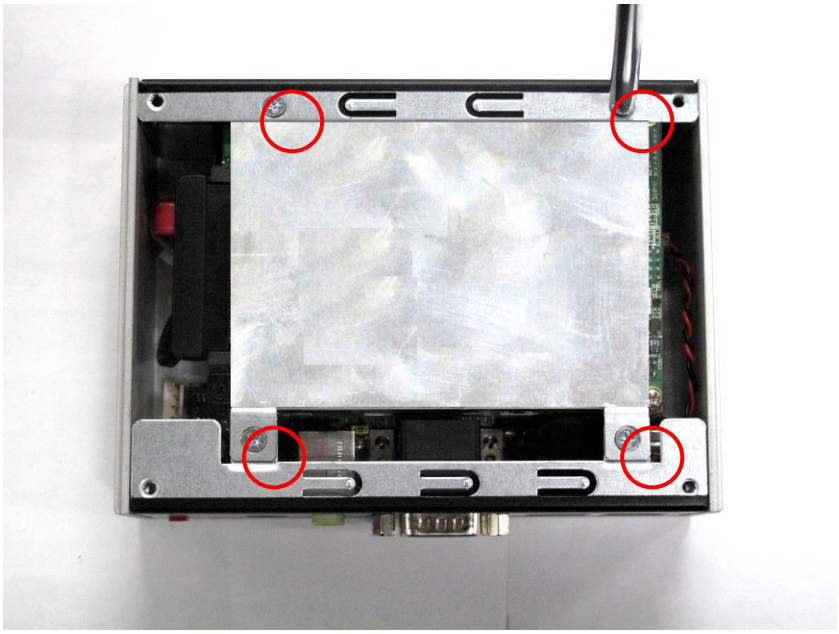


Step 9 Push the module down, until it is firmly seated by locking two latches on the sides.



NOTE ***While uninstalling the Memory Module, you need to stretch these two latches aside, and then take the module off the socket.***

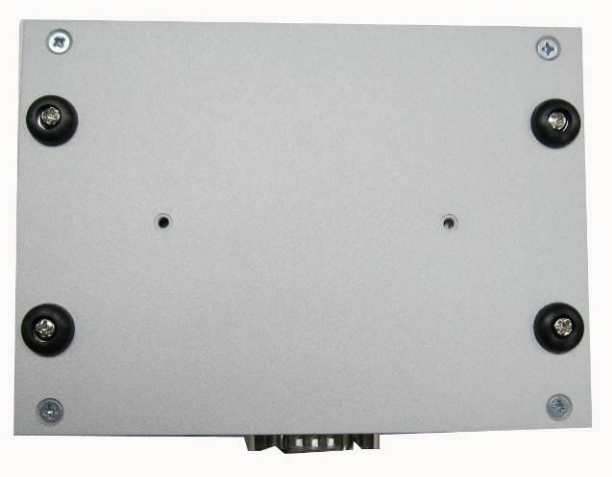
Step 10 Put the HDD bracket back to the system, and fasten screws of HDD bracket



Step 11 Put the bottom cover back to the chassis, and fasten all screws.

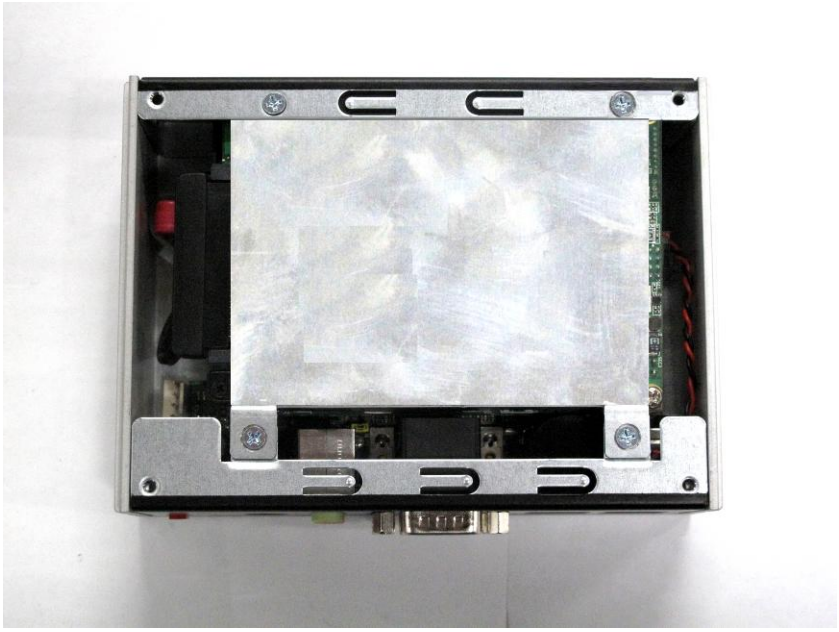
2.2 SATA HDD

Step 1 Turn off the system, and unplug the power cord.
Step 2 Turn the system upside down to locate screws at the bottom

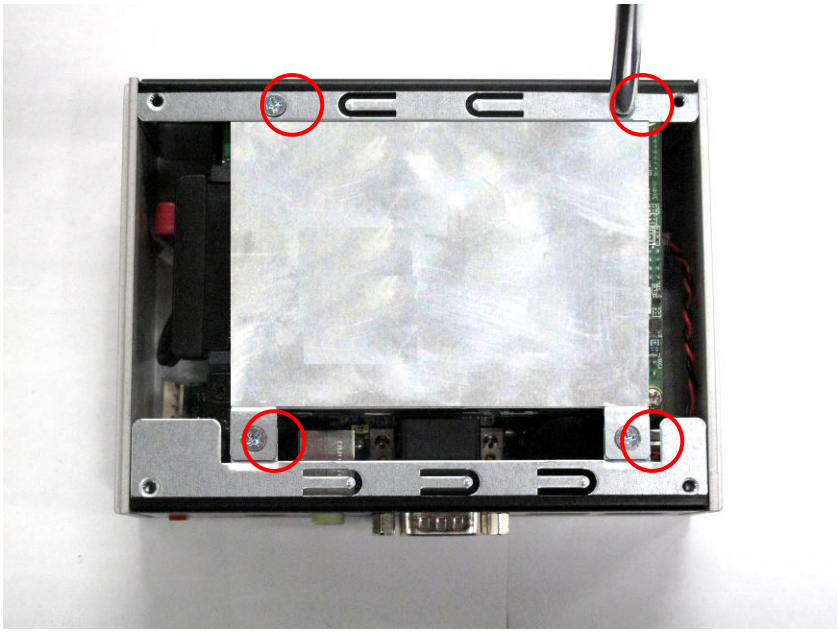


Step 3 Loosen screws of bottom cover.

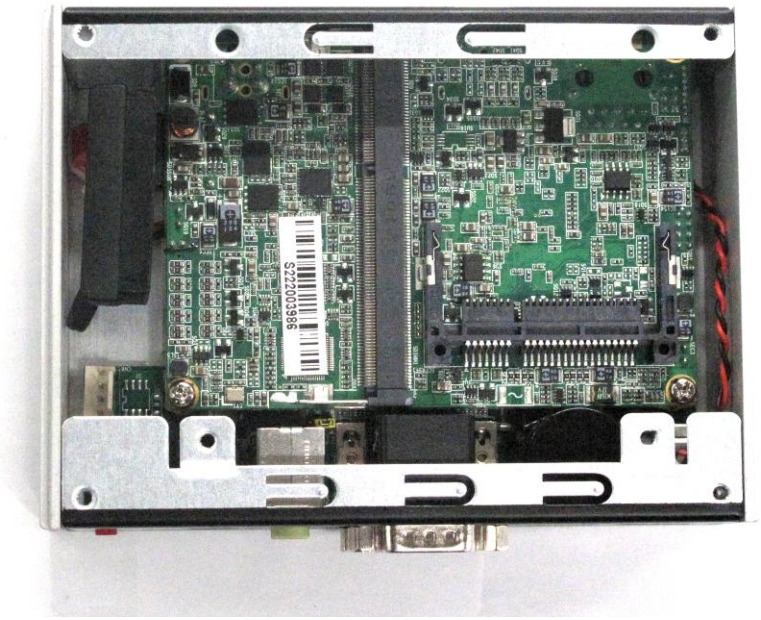
Step 4 emove the bottom cover



Step 5 oosen screws of HDD bracket



Step 6 emove the HDD bracket, and pick it up for assemble.

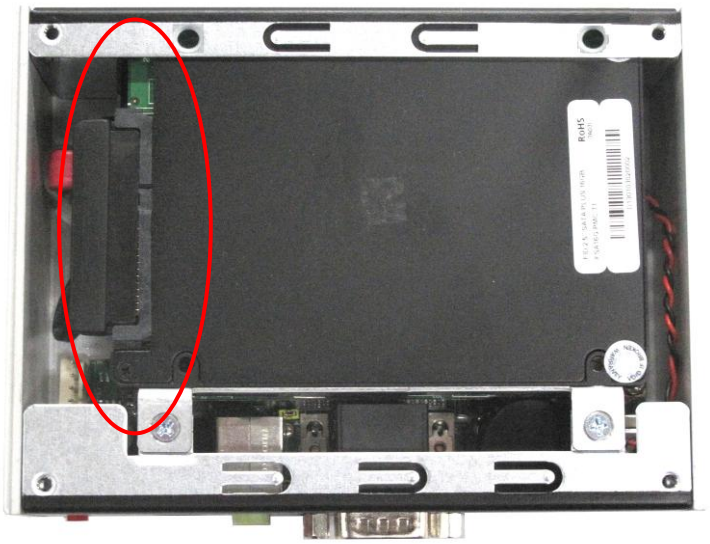


Step 7 Assembly the HDD bracket together with the SATA storage. HDD assembly parts include:

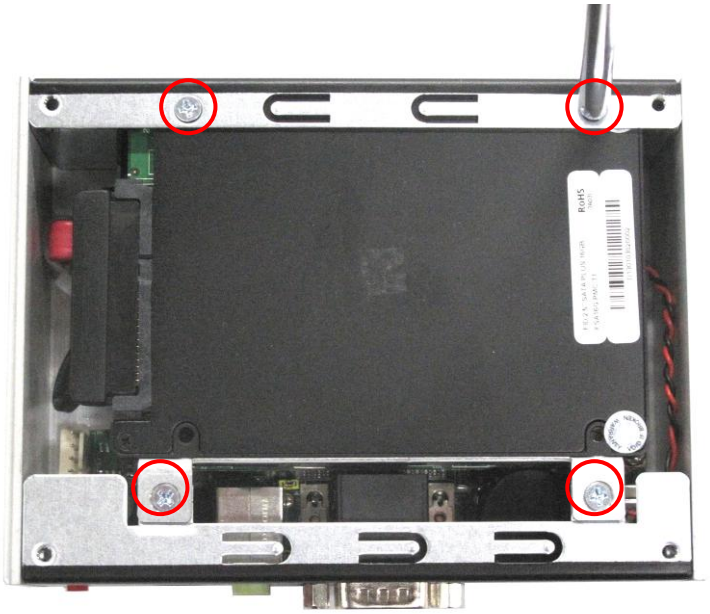
- HDD Bracket x 1
- 2.5 inch HDD or SSD x 1
- Screws x 4
- HDD Mylar x1

Screw the 2.5 inch HDD, together with the HDD Mylar, to the HDD bracket.

Step 8 Connect SATA cable and power cable to SATA HDD, and fasten screws of HDD Bracket



Step 9 Fasten screws of HDD bracket

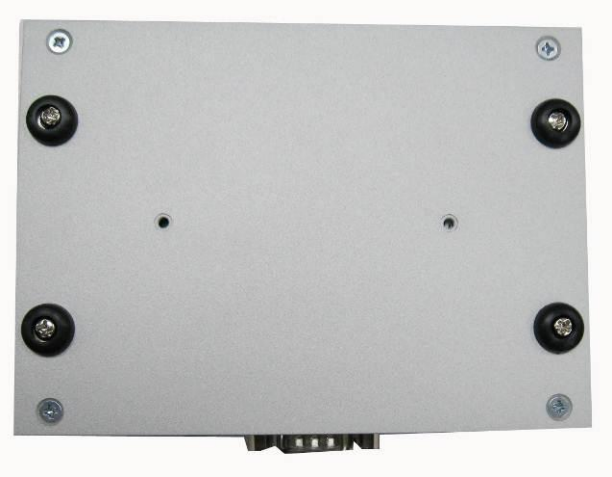


Step 10 Put the bottom cover back to the chassis, and fasten all screws.

.

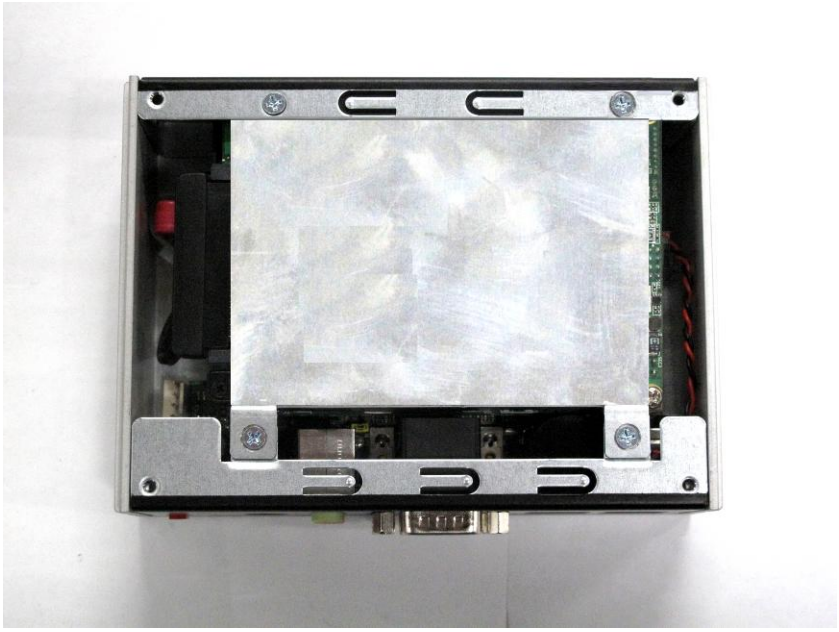
2.3 Installing CFast™

Step 1 Turn off the system, and unplug the power cord.
Step 2 Turn the system upside down to locate screws at the bottom

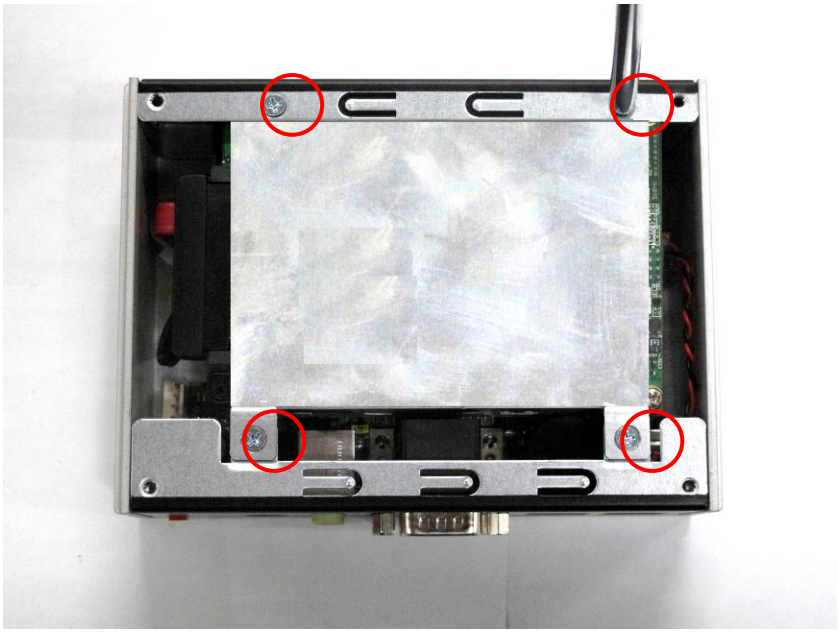


Step 3 Loosen screws of bottom cover.

Step 4 emove the bottom cover

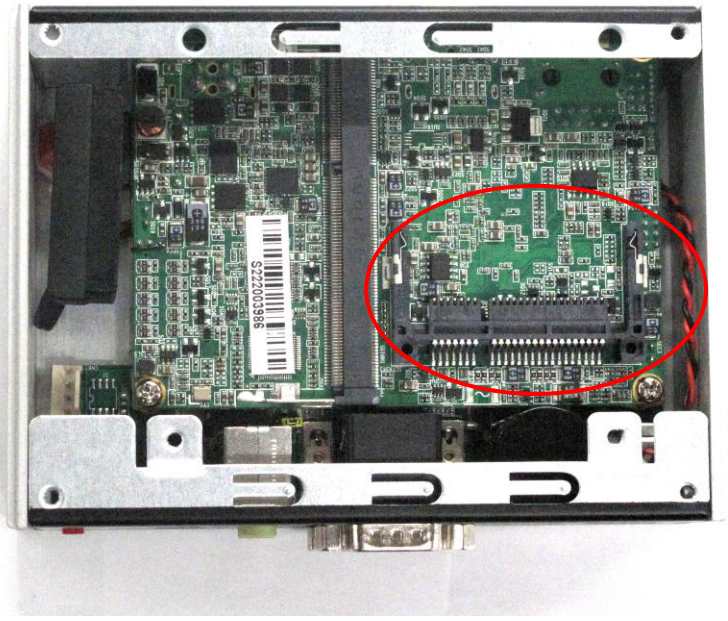


Step 5 oosen screws of HDD bracket

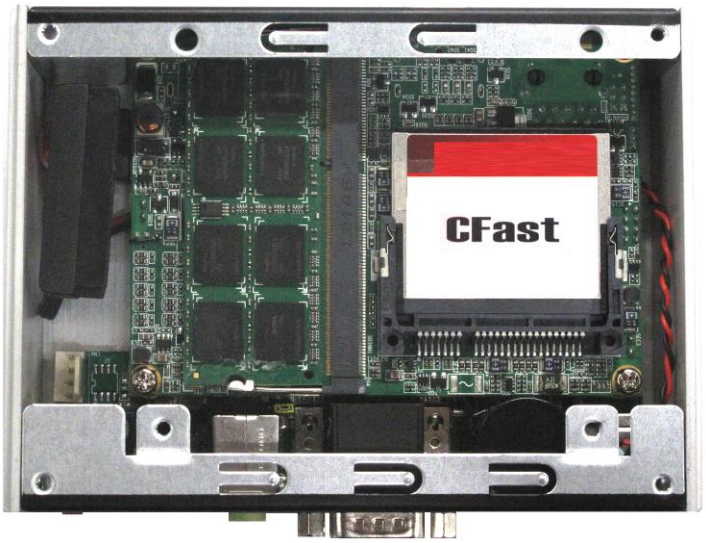


Step 6 emove the HDD bracket

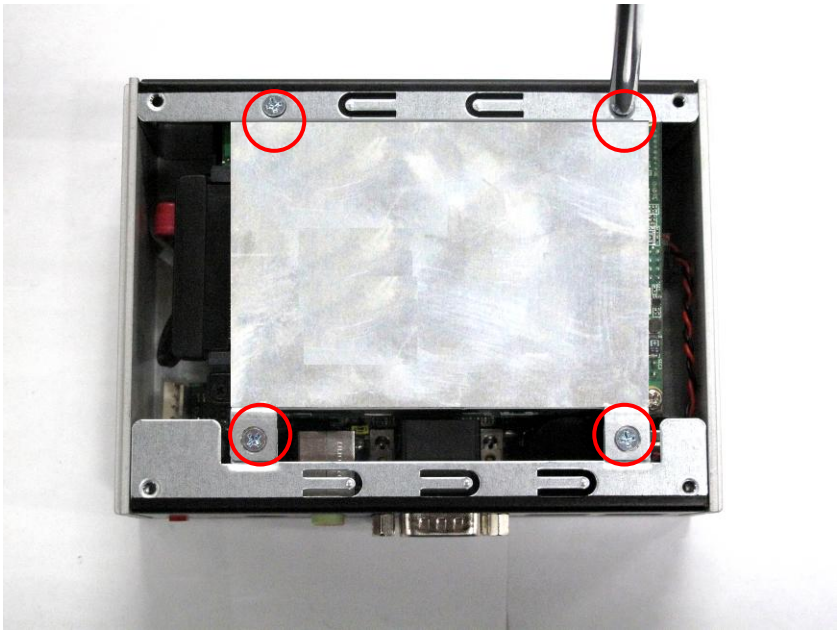
Step 7 Locate the CFast™ slot as marked.



Step 8 Insert the CFast™ card into the socket until it is firmly seated.



Step 9 Put the HDD bracket back to the system, and fasten screws of HDD bracket



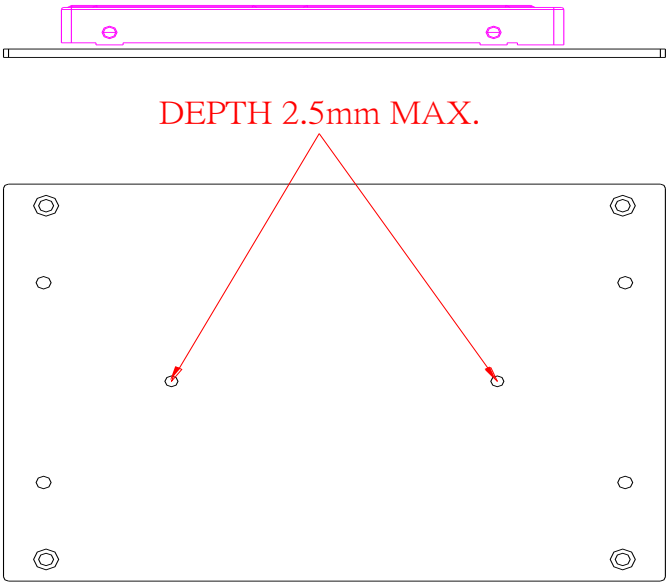
Step 10 Put the bottom cover back to the chassis, and fasten all screws.

2.4 Installing DIN Mount (Optional)

The eBOX530-830-FL provides DIN Mount that customers can install as below:

Step 1 Prepare DIN Mount assembling components (screws and bracket) ready.

MAXIMUM DEPTH OF THE HDD BRACKET: 2.5mm

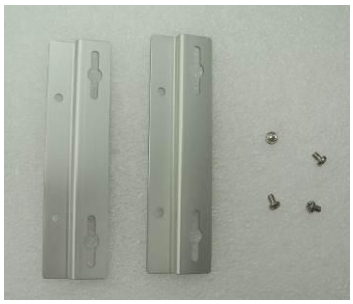


Step 2 Assembly the bracket to the system, and fasten screws tight.

2.5 Installing Rail Mount (Optional)

The eBOX530-830-FL provides Rail Mount that customers can install as below:

Step 1 Prepare Rail Mount assembling components (screws and bracket) ready.

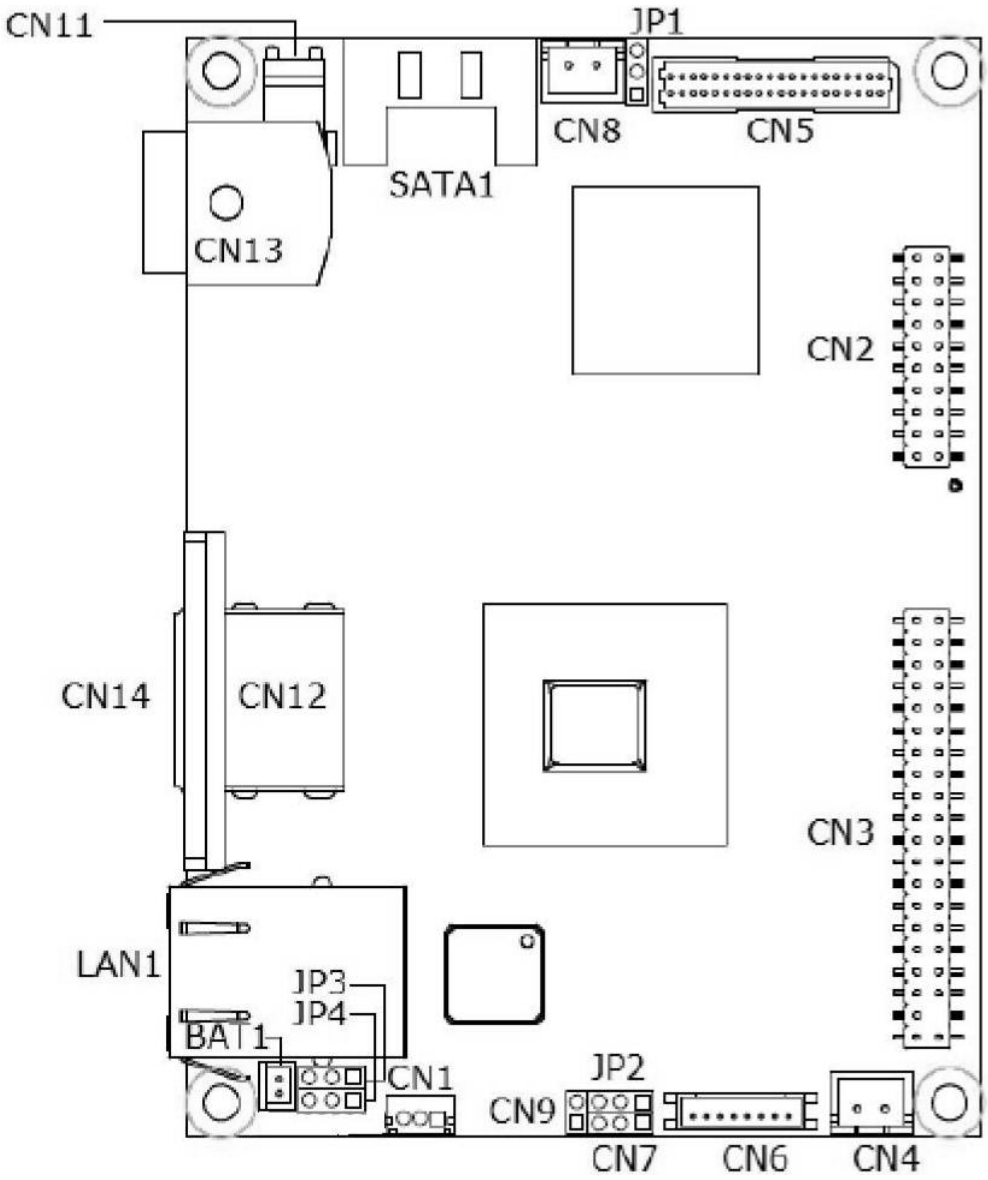


Step 2 Assembly the bracket to the system, and fasten screws tight.

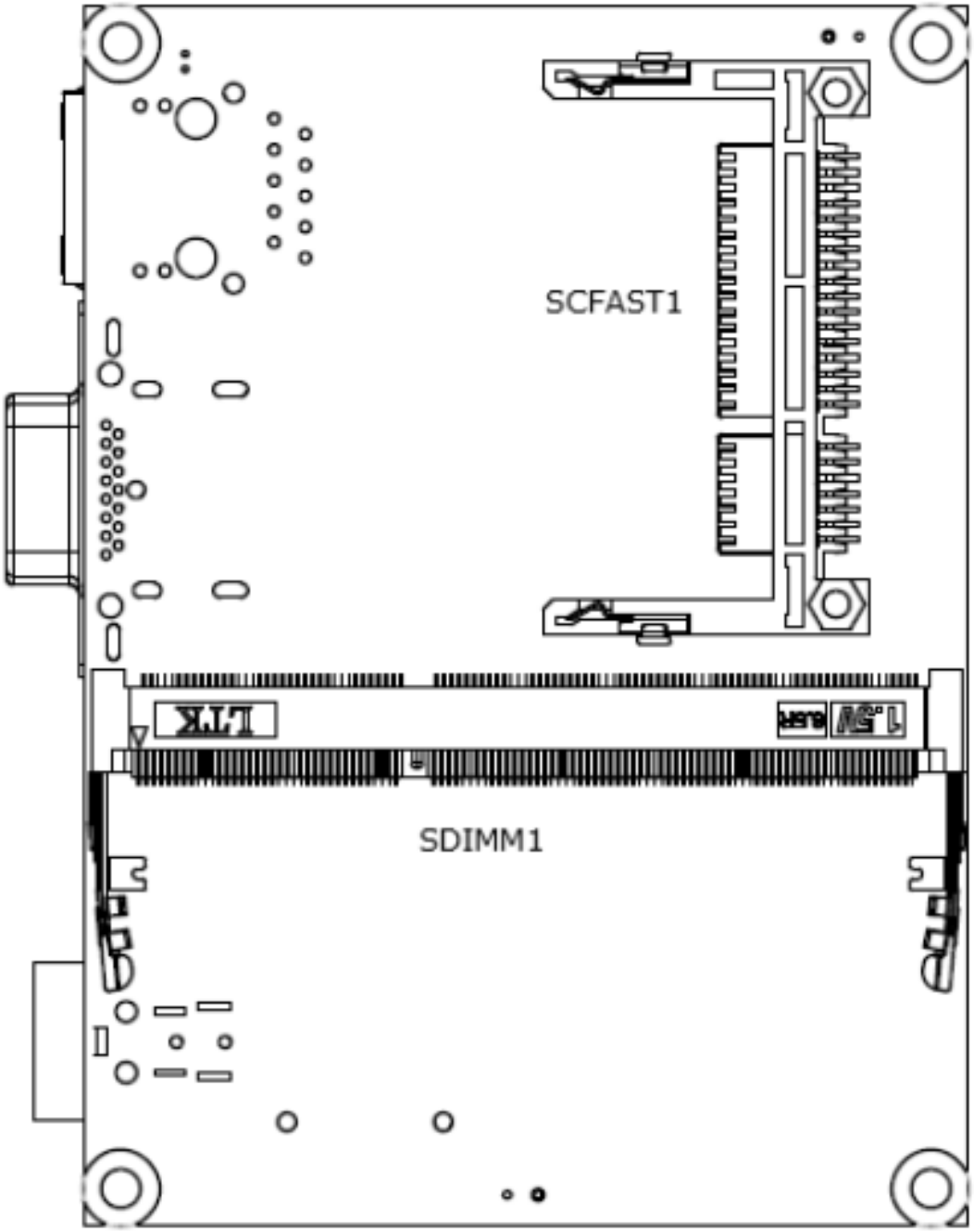
CHAPTER 3
Jumper Setting & Connector

Proper jumper settings configure the **eBOX530-830-FL** to meet your application purpose. We are herewith listing a summary table of all jumpers and default settings for onboard devices, respectively.

3.1 SBC layout



TOP Side

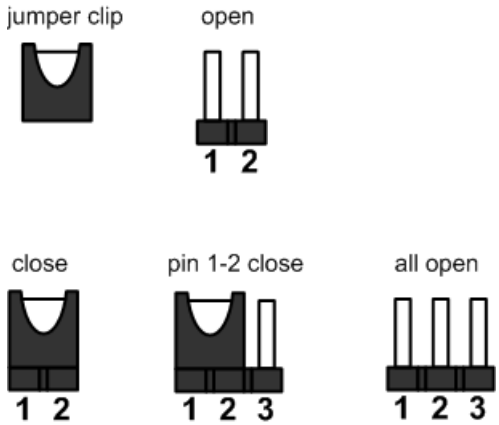


Bottom Side

NOTE: We strongly recommended that you should not modify any unmentioned jumper setting without Axiomtek FAE's instruction. Any modification without instruction might cause system to become damage.

3.2 Jumper Settings

Jumper is a small component consisting of jumper clip and jumper pins. Install jumper clip on 2 jumper pins to close. And remove jumper clip from 2 jumper pins to open. Below illustration shows how to set up jumper.



Properly configure jumper settings on the eBOX530-830-FL to meet your application purpose. We are herewith listing a summary table of all jumpers and default settings for onboard devices, respectively.

Jumper	Description	Section
JP3	Auto Power On	3.2.1
JP4	Restore BIOS Optimal Defaults	3.2.2

3.2.1 Auto Power On

If JP3 is enabled for AC power input, the system will be automatically power on without pressing soft power button. If JP3 is disabled for AC power input, it is necessary to manually press soft power button to power on the system.

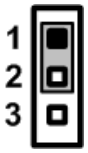
The function is also used to simulate AT mode when set as Enable.

Function	Setting
Disable auto power on (Default)	2-3 close
Enable auto power on	1-2 close

3.2.2 Restore BIOS Optimal Defaults

Put jumper clip to pin 2-3 of JP4 for a few seconds then move it back to pin 1-2. Doing this procedure can restore BIOS optimal defaults.

Function	Setting
Normal (Default)	1-2 close
Restore BIOS optimal defaults	2-3 close



3.3 Connectors

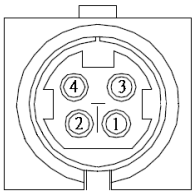
Connectors connect the system with other parts/devices. Loose or improper connection might cause problems. Make sure all connectors are properly and firmly connected. Below summary table shows you all connectors on the eBOX530-830-FL.

External Connectors	Section
DC-in Power-Din Connector	3.3.1
Serial Port Connector	3.3.2
VGA Connector	3.3.3
DisplayPort Connector	3.3.4
Ethernet Connector(LAN1,LAN2)	3.3.5
USB Connector	3.3.6
ATX Power On/Off Button	3.3.7
Audio Connector	3.3.8
Internal Connectors	**Section**
Serial ATA (SATA) Connector	3.3.9
SATA Power Connector	3.3.10
CFast™ Socket	3.3.11
DDR3 SO-DIMM Socket	3.3.12

3.3.1 DC-in Power-Din Connector

The system supports a DC5V power-din connector for system power input. Connect it to the power AC-DC 25W Adapter.

Pin	Signal
1	GND
2	GND
3	+5V
4	+5V



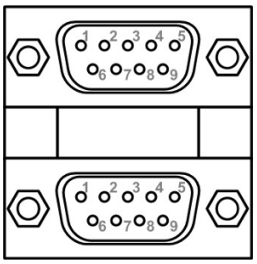
3.3.2 Serial Port Connector

The system has four serial ports. COM1 is RS-232/422/485 port, and COM2 is RS-232 port. Please refer to BIOS for detail setting if user wants to modify the default setting of COM1.

COM1			
Pin	**RS-232**	**RS-422**	**RS-485**
1	DCD, Data Carrier Detect	TX-	Data-
2	RXD, Receive Data	TX+	Data+
3	TXD, Transmit Data	RX+	N.C
4	DTR, Data Terminal Ready	RX-	N.C.
5	GND, Ground	No use	No use
6	DSR, Data Set Ready	No use	No use
7	RTS, Request To Send	No use	No use
8	CTS, Clear To Send	No use	No use
9	RI, Ring Indicator	No use	No use

COM2	
Pin	**RS-232**
1	DCD, Data Carrier Detect
2	RXD, Receive Data
3	TXD, Transmit Data
4	DTR, Data Terminal Ready
5	GND, Ground
6	DSR, Data Set Ready
7	RTS, Request To Send
8	CTS, Clear To Send
9	RI, Ring Indicator

COM2

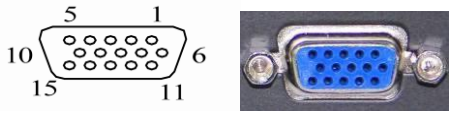


COM1

3.3.3 VGA Connector

The VGA connector is a slim type 15-pin D-Sub connector which is common for the CRT VGA display. The VGA interface configuration can be configured via the software utility.

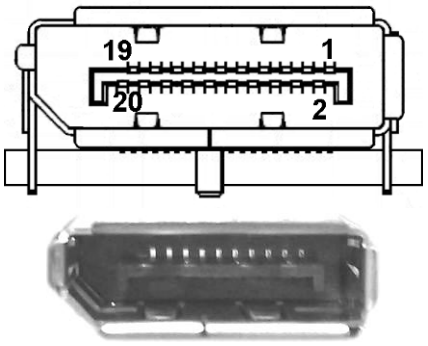
Pin	Signal	Pin	Signal	Pin	Signal
1	Red	2	Green	3	Blue
4	N.C.	5	GND	6	DETECT
7	GND	8	GND	9	VCC
10	GND	11	N.C.	12	DDC DATA
13	Horizontal Sync	14	Vertical Sync	15	DDC CLK



3.3.4 DisplayPort Connector (Optional)

DisplayPort interface is also called DP port, which is co-layout with VGA connector.

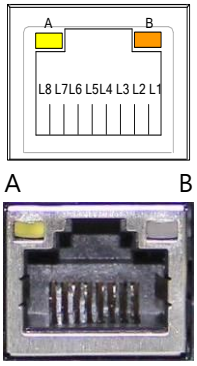
Pin	Signal
1	DDPC_0P
2	GND
3	DDCP_0N
4	DDPC_1P
5	GND
6	DDCP_1N
7	DDPC_2P
8	GND
9	DDCP_2N
10	DDPC_3P
11	GND
12	DDCP_3N
13	HDMI Detection
14	GND
15	DCP_AUX_DP
16	GND
17	DCP_AUX_DN
18	DDC_HDP
19	GND
20	DP_PWR



3.3.5 LAN Connector (LAN1, LAN2)

The RJ-45 connector is for Ethernet. To connect the board to a 1000/100/10 Base-T hub, just plug one end of the cable into connector and connect the other end (phone jack) to a 1000/100/10-Base-T hub

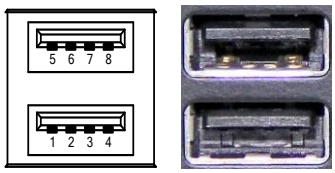
Pin	Signal	Pin	Signal
L1	MDI0+	L5	MDI2-
L2	MDI0-	L6	MDI1-
L3	MDI1+	L7	MDI3+
L4	MDI2+	L8	MDI3-
A	Active LED (Yellow)		
B	100 LAN LED (Green)/ 1000 LAN LED (Orange)		



3.3.6 USB Connector

The Universal Serial Bus connectors are compliant with USB 2.0 (480Mbps), and ideally for installing USB peripherals such as keyboard, mouse, scanner, etc.

Pin	Signal USB Port 0	Pin	Signal USB Port 1
1	USB VCC (+5V level)	5	USB VCC (+5V level)
2	USB #0_D-	6	USB #1_D-
3	USB #0_D+	7	USB #1_D+
4	Ground (GND)	8	Ground (GND)



3.3.7 ATX Power On/OFF Button

The ATX power button is on the I/O side. It can allow users to control eBOX530-830-FL power on/off.

Pin	Signal
1	GND
2	PSIN

3.3.8 Audio Connector

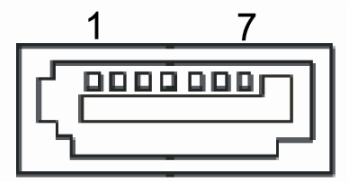
These two audio jacks ideal are for Audio Mic-In and Audio Line-out.

Pin	Signal
1	Microphone In
2	Line Out

3.3.9 SATA Connector

The SATA connector is for high-speed SATA interface ports and they can be connected to hard disk devices.

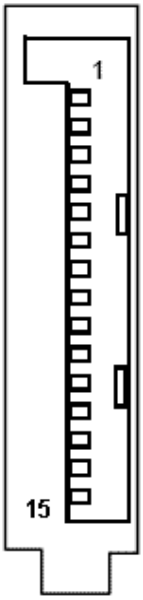
Pin	Signal
1	GND
2	SATA_TX+
3	SATA_TX-
4	GND
5	SATA_RX-
6	SATA_RX+
7	GND



3.3.10 SATA Power Connector

The SATA connector is for high-speed SATA interface ports and they can be connected to hard disk devices.

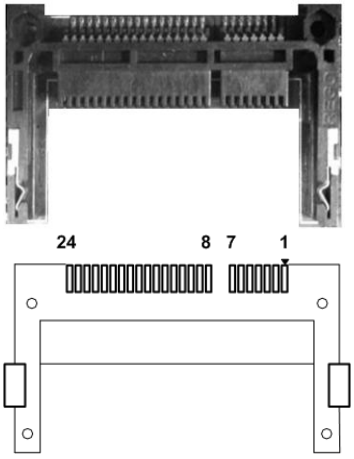
Pin	Signal
1	+3.3VDC
2	+3.3VDC
3	+3.3VDC
4	COM
5	COM
6	COM
7	+5VDC
8	+5VDC
9	+5VDC
10	COM
11	COM
12	COM
13	+12VDC
14	+12VDC
15	+12VDC



3.3.11 CFast™ Socket

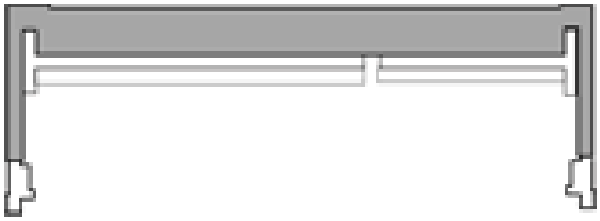
The system is equipped with a CFast™ socket on the bottom side to support a CFast™ card which is based on the Serial ATA bus. The socket is specially designed to avoid incorrect installation of the CFast™ card. When installing or removing the CFast™ card, please make sure the system power is off. The CFast™ card by default identifies itself as C: or D: drive in your PC system.

Pin	Signal	Pin	Signal
1	GND	13	N.C
2	SATA_TX+	14	GND
3	SATA_TX-	15	N.C
4	GND	16	CFAST_LED#
5	SATA_RX-	17	N.C
6	SATA_RX+	18	N.C
7	GND	19	N.C
8	N.C	20	+3.3V Level
9	GND	21	+3.3V Level
10	N.C	22	GND
11	N.C	23	GND
12	N.C	24	N.C



3.3.12 DDR3 SODIMM Socket

eBOX530-830-FL supports one standard DDR3 204-pin 800/1066 MHz SO-DIMM socket.



This page is intentionally left blank.

CHAPTER 4
AMI BIOS Setup Utility

This chapter provides users with detailed description how to set up basic system configuration through the AMI BIOS setup utility.

4.1 Starting

To enter the setup screens, follow the steps below:

1. Turn on the computer and press the <Del> key immediately.
2. After you press the <Delete> key, the main BIOS setup menu displays. You can access the other setup screens from the main BIOS setup menu, such as the Chipset and Power menus.

4.2 Navigation Keys

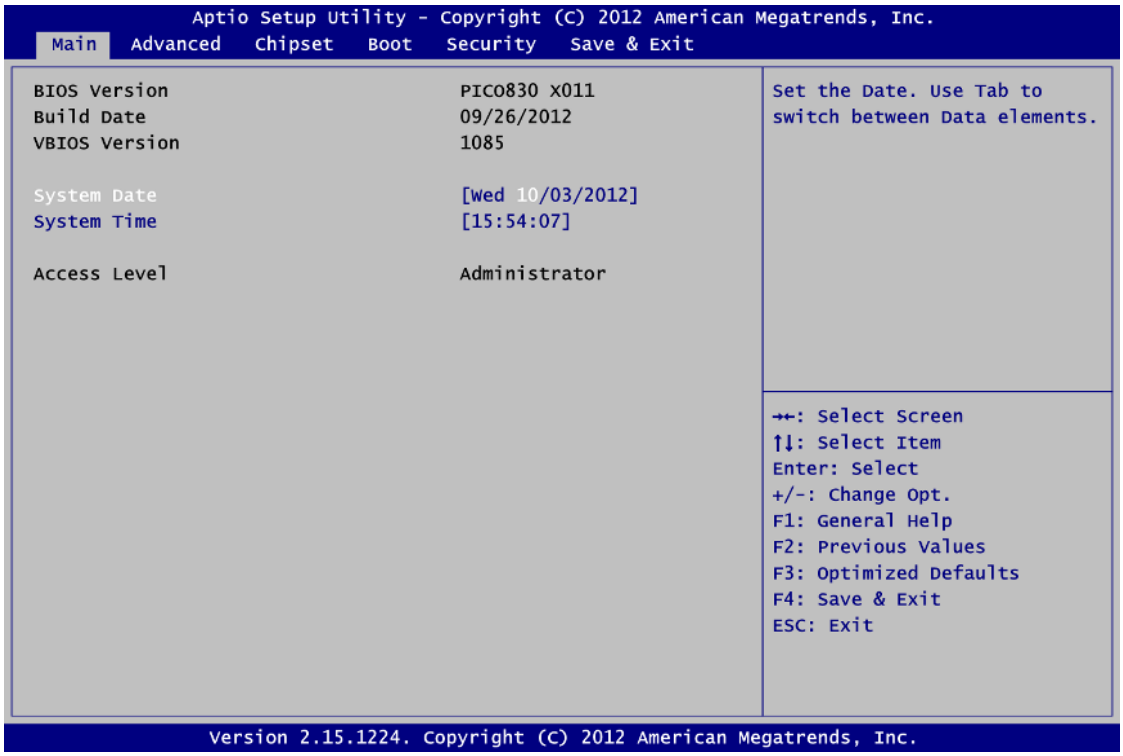
The BIOS setup/utility uses a key-based navigation system called hot keys. Most of the BIOS setup utility hot keys can be used at any time during the setup navigation process. These keys include <F1>, <F2>, <Enter>, <ESC>, <Arrow> keys, and so on.

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

Hot Keys	Description
→← **Left/Right**	The Left and Right <Arrow> keys allow you to select a setup screen.
↑↓ **Up/Down**	The Up and Down <Arrow> keys allow you to select a setup screen or sub-screen.
+– Plus/Minus	The Plus and Minus <Arrow> keys allow you to change the field value of a particular setup item.
Tab	The <Tab> key allows you to select setup fields.
F1	The <F1> key allows you to display the General Help screen.
F2	The <F2> key allows you to Load Previous Values.
F3	The <F3> key allows you to Load Optimized Defaults.
F4	The <F4> key allows you to save any changes you have made and exit Setup. Press the <F4> key to save your changes.
Esc	The <Esc> key allows you to discard any changes you have made and exit the Setup. Press the <Esc> key to exit the setup without saving your changes.
Enter	The <Enter> key allows you to display or change the setup option listed for a particular setup item. The <Enter> key can also allow you to display the setup sub- screens.

4.3 Main Menu

When you first enter the setup utility, you will enter the Main setup screen. You can always return to the Main setup screen by selecting the Main tab. System Time/Date can be set up as described below. The Main BIOS setup screen is shown below.



System Date/Time
Use this option to change the system time and date. Highlight System Time or System Date using the <Arrow> keys. Enter new values through the keyboard. Press the <Tab> key or the <Arrow> keys to move between fields. The date must be entered in MM/DD/YY format. The time is entered in HH:MM:SS format.

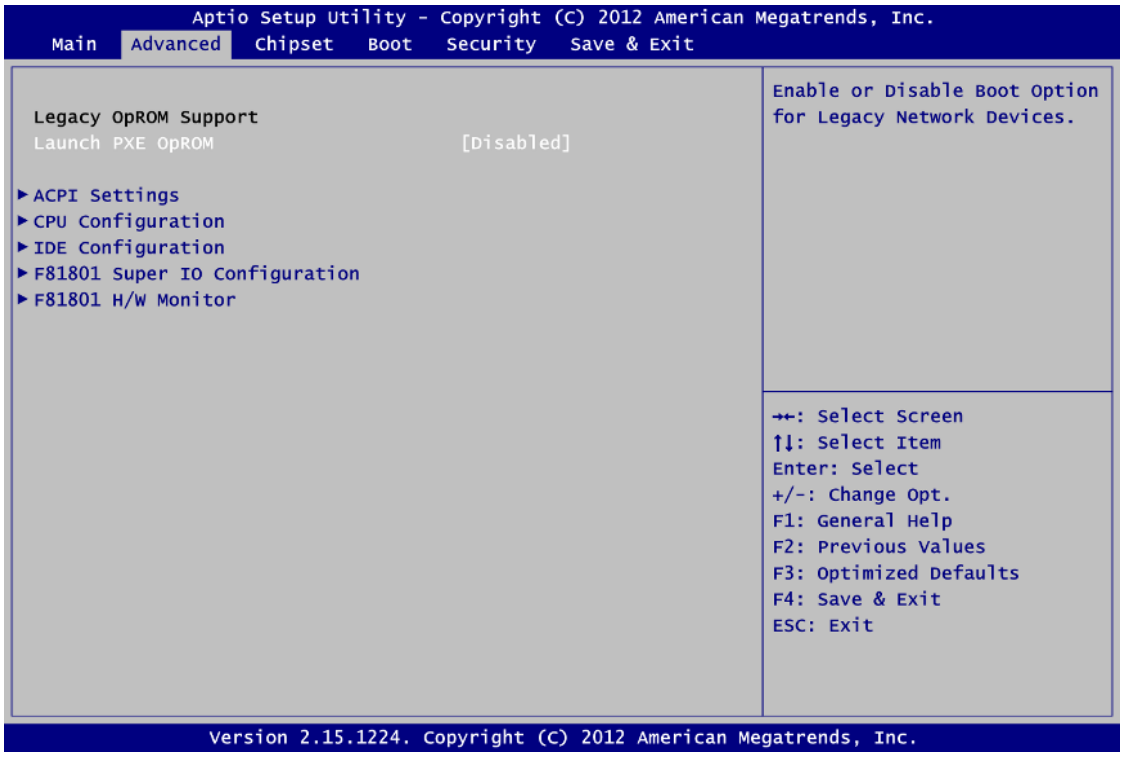
4.4 Advanced Menu

- **Launch PXE OpROM**
  Use this item to enable or disable the boot ROM function of the onboard LAN chip when the system boots up.

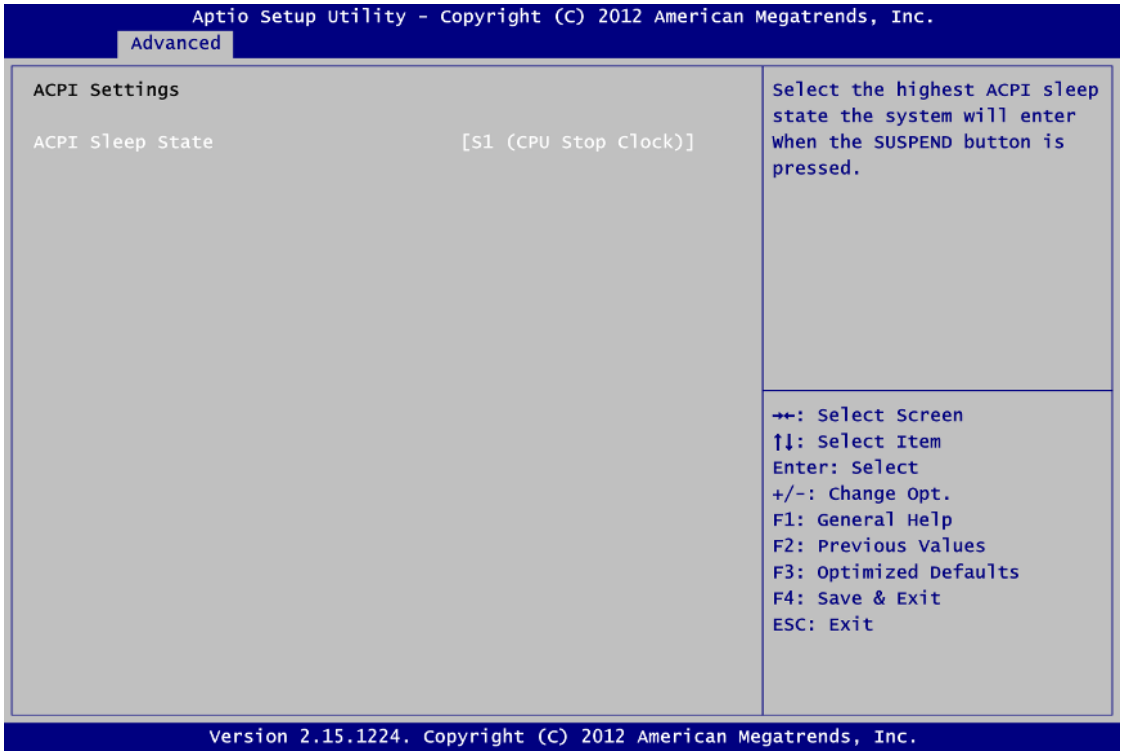
  The Advanced menu also allows users to set configuration of the CPU and other system devices. You can select any of the items in the left frame of the screen to go to the sub menus:

  ► ACPI Settings
  ► CPU Configuration
  ► IDE Configuration
  ► F81801 Super IO Configuration
  ► F81801 H/W Monitor

  For items marked with "►", please press <Enter> for more options.



- **ACPI Settings**

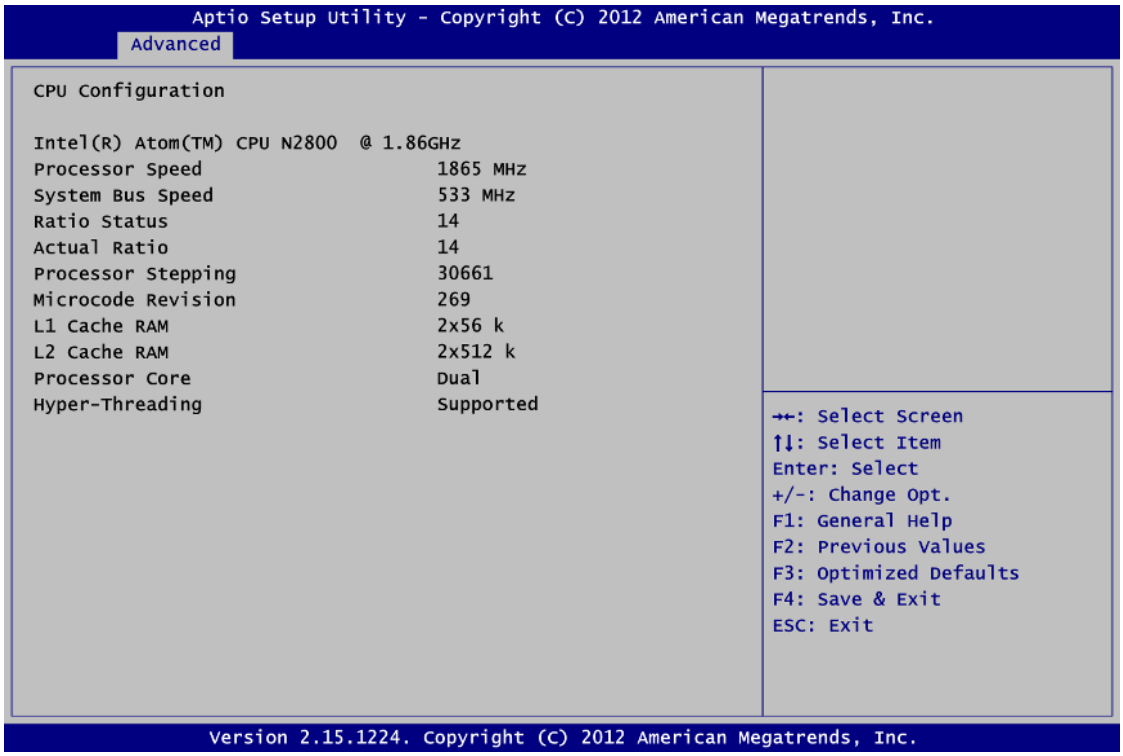


ACPI Sleep State

When the sleep button is pressed, the system will be in the ACPI sleep state. The default is S1 (CPU Stop Clock).

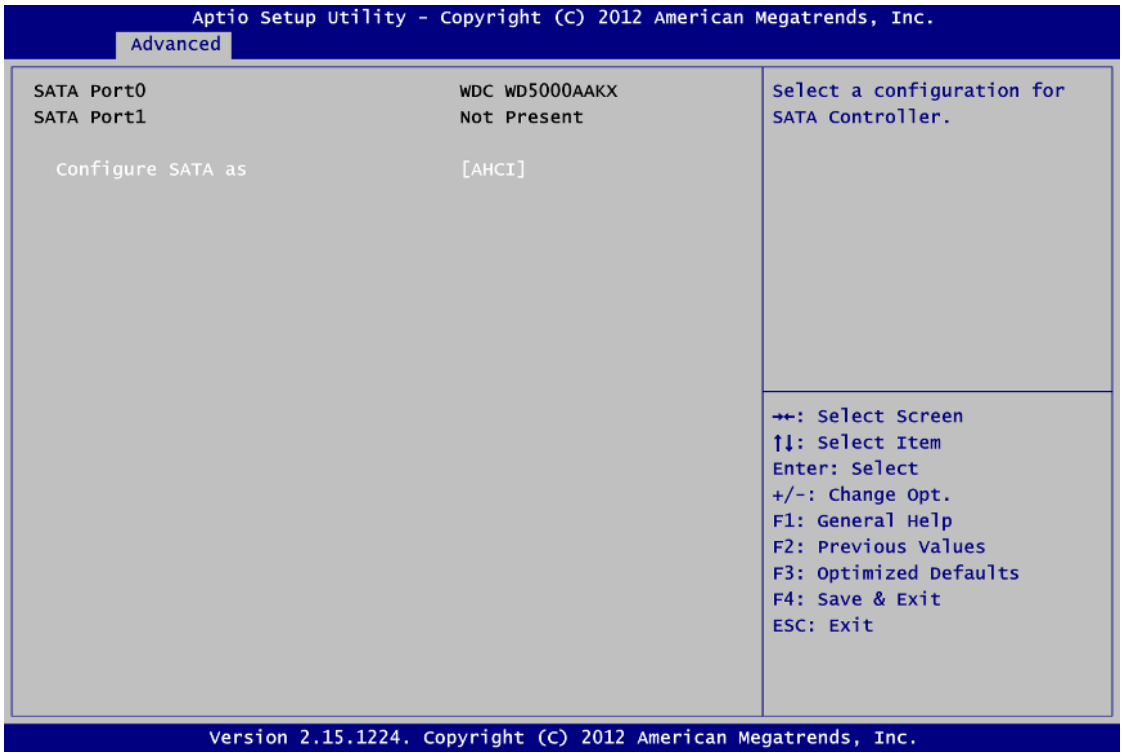
- **CPU Configuration**

This screen shows the CPU Configuration.



- **IDE Configuration**

In the IDE Configuration menu, you can see the currently installed hardware in the SATA ports. During system boot up, the BIOS automatically detects the presence of SATA devices.

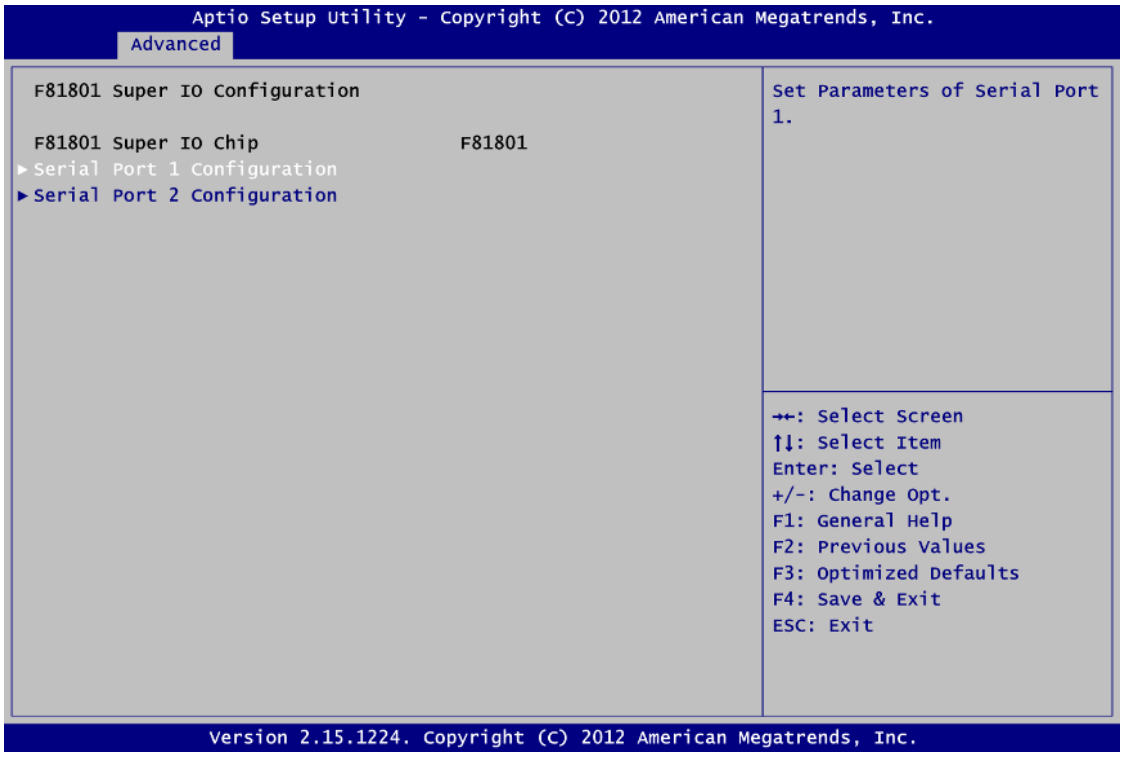


Configure SATA as

Determine how SATA controller(s) operate. Operation mode options are IDE Mode and AHCI (Advanced Host Controller Interface) Mode.

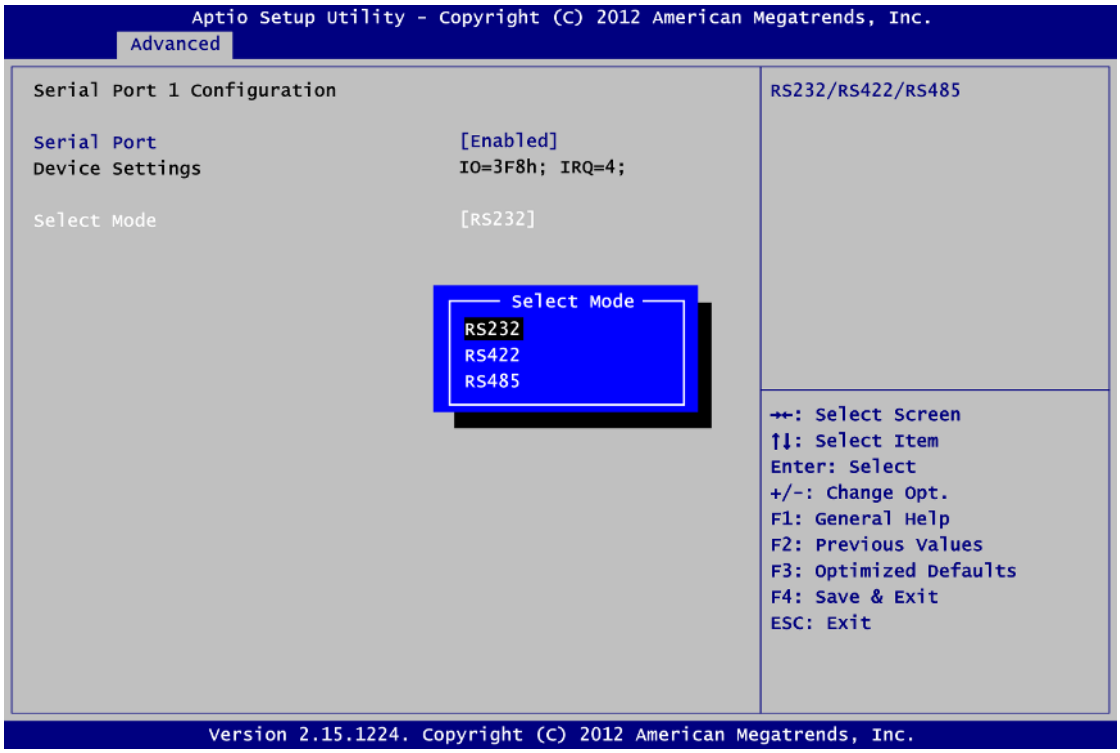
- **F81801 Super IO Configuration**

You can use this screen to select options for the Super IO Configuration, and change the value of the selected option. A description of the selected item appears on the right side of the screen. For items marked with "►", please press <Enter> for more options.



- **Serial Port 2 Configuration**

Use this option to enable or disable the serial port 2.

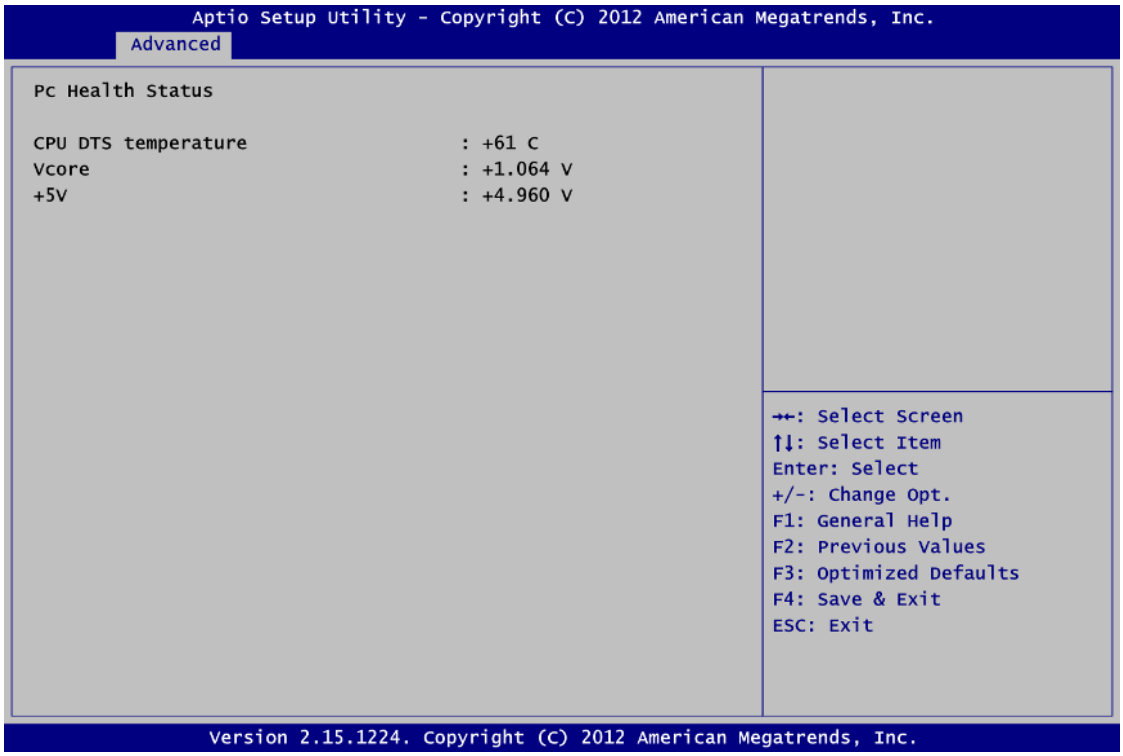


Serial Port 1 Configuration

Use this option to enable or disable and set RS-422/RS-485 mode for the serial port 1.

- **F81801 H/W Monitor**

This screen monitors hardware health status.



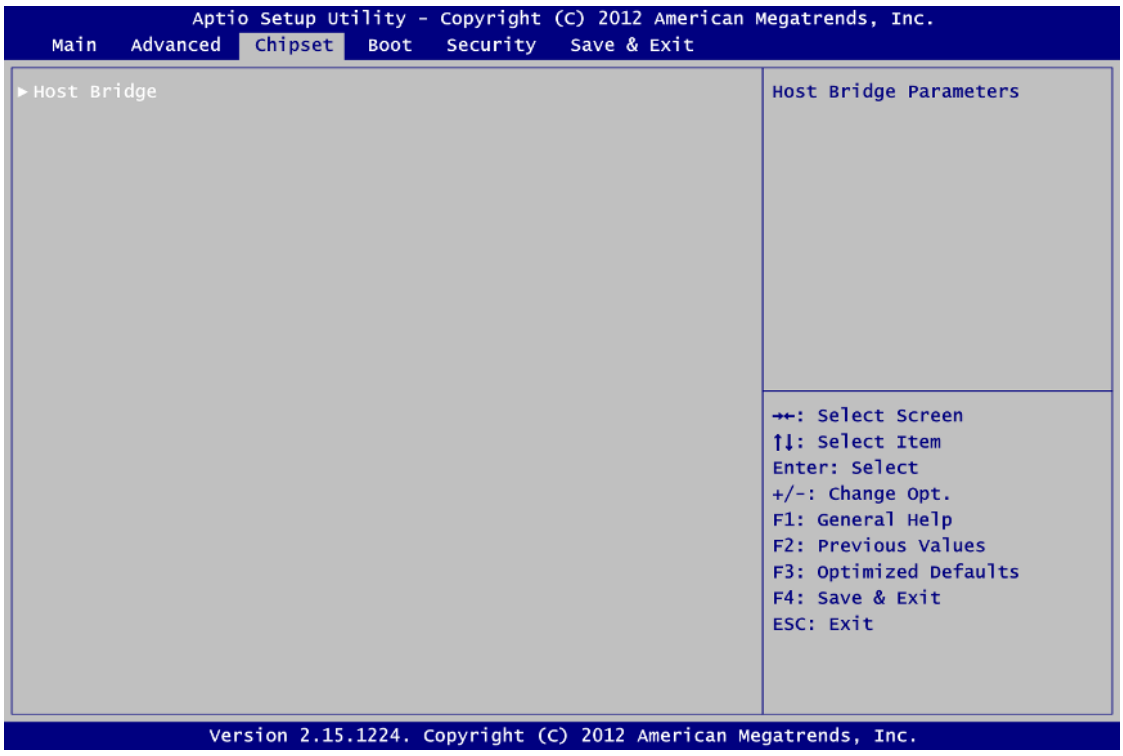
This screen displays the temperature of CPU and system voltages (Vcore and +5V).

4.5 Chipset Menu

The Chipset menu allows users to change the advanced chipset settings. You can select any of the items in the left frame of the screen to go to the sub menus:

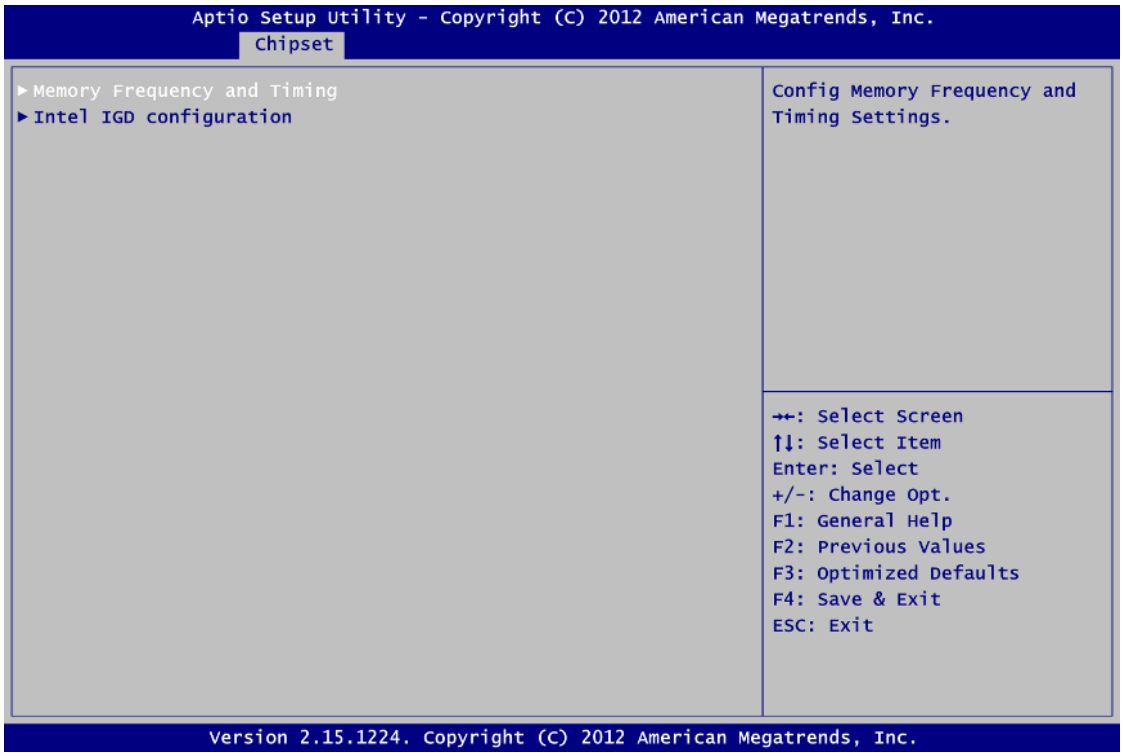
► Host Bridge

For items marked with "►", please press <Enter> for more options.



- **Host Bridge**

This screen allows users to configure parameters of Host Bridge chipset.



Memory Frequency and Timing

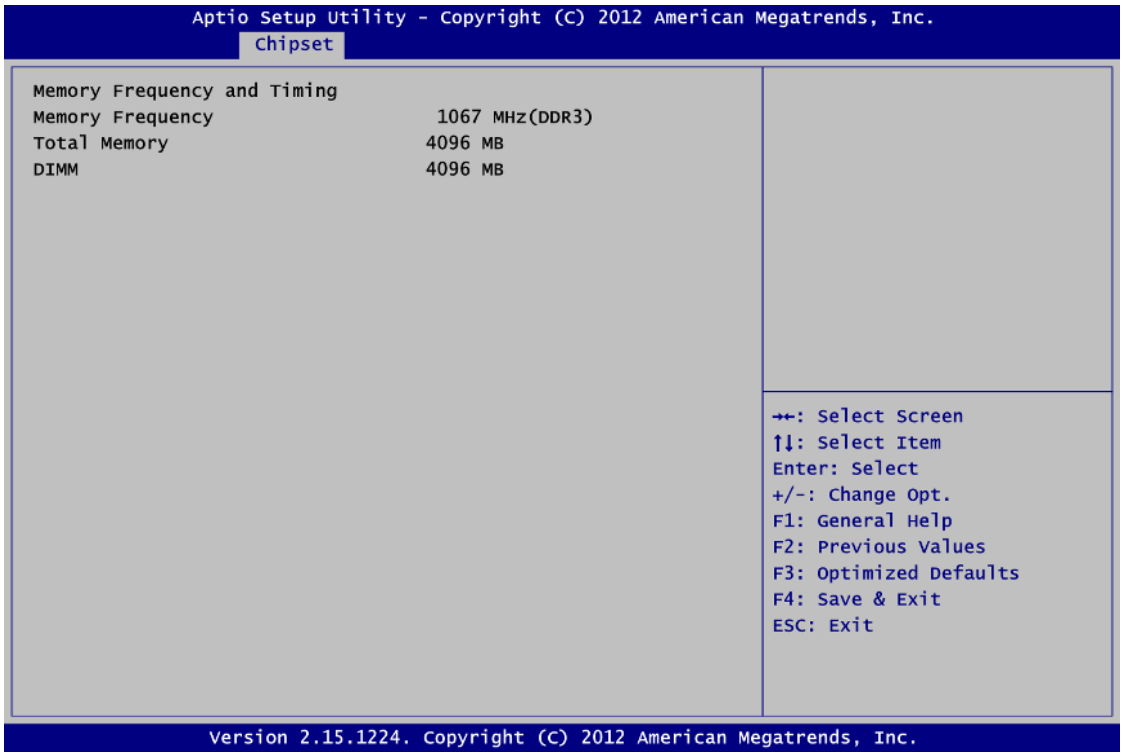
Use this item to refer to the information related to memory frequency.

Intel IGD Configuration

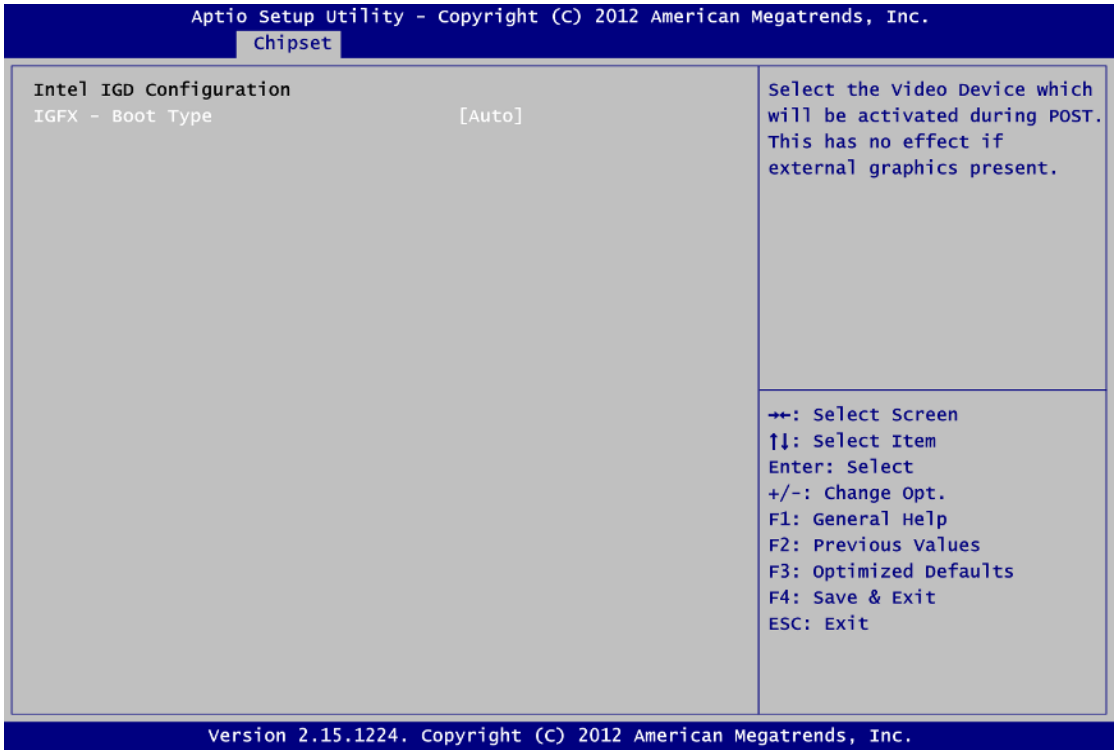
Use this item to configure internal graphics controller.

- **Memory Frequency and Timing**

This screen shows the memory frequency information.

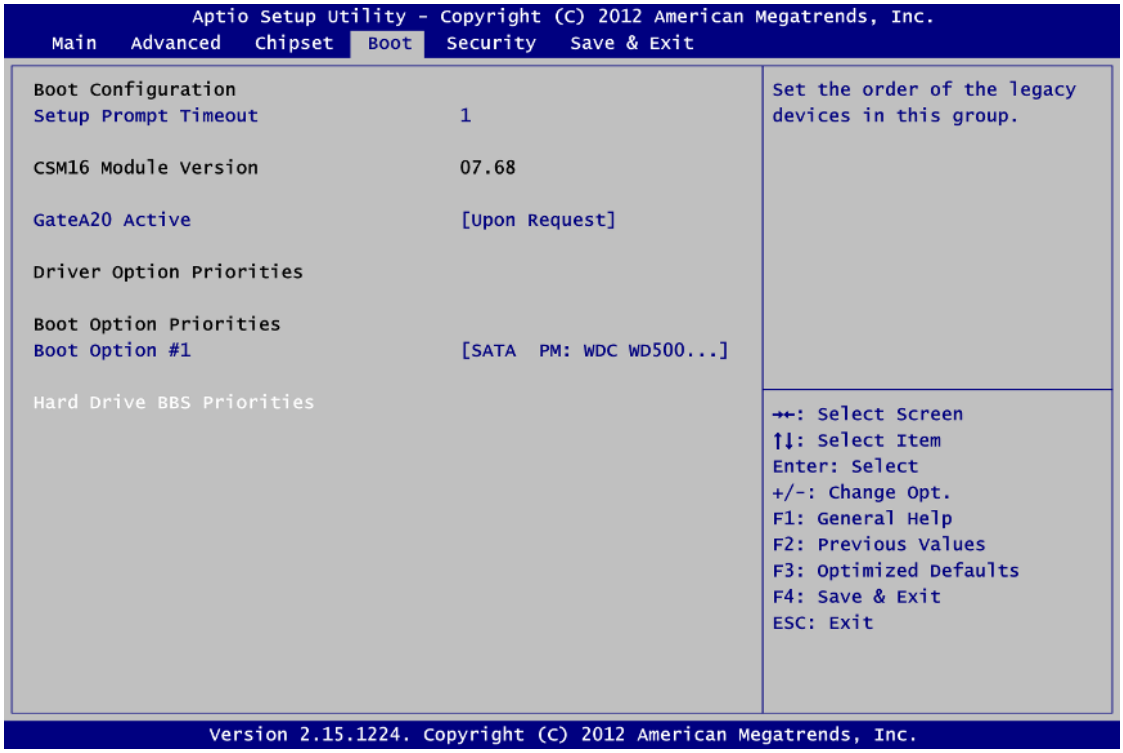


- **Intel IGD Configuration**



4.6 Boot Menu

The Boot menu allows users to change boot options of the system.



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

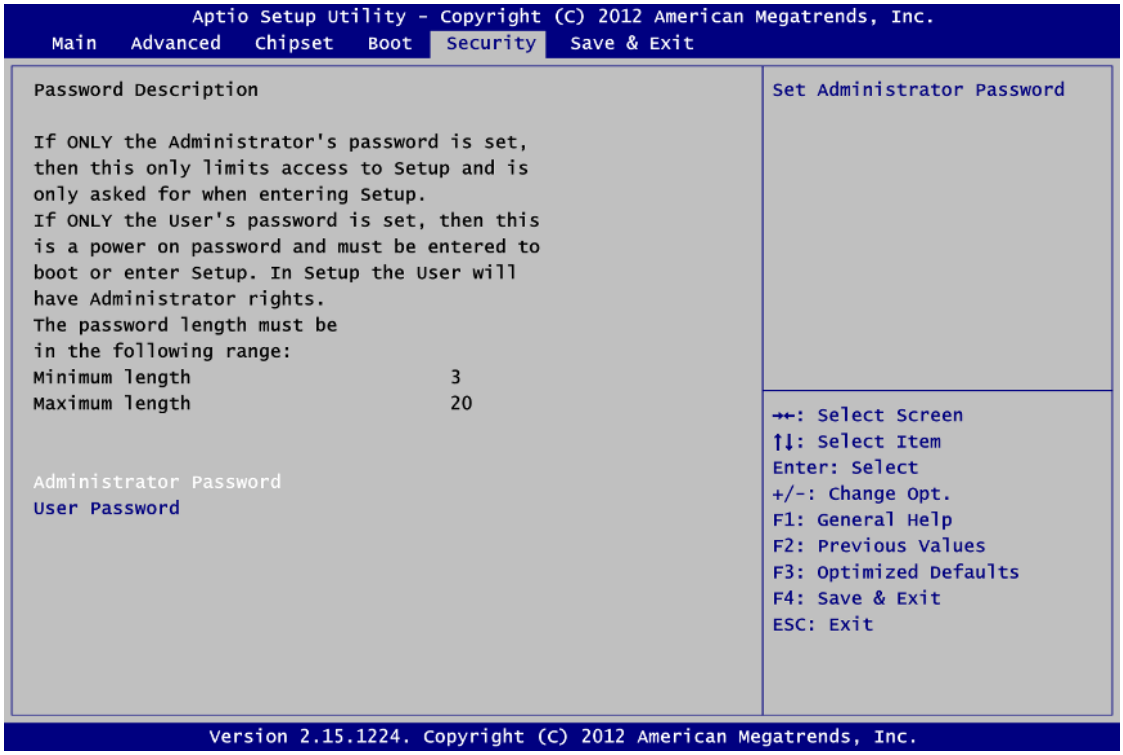
GateA20 Active
If Upon Request is selected, GA20 can be disabled using BIOS services. If Always is selected, disabling G20 is not allowed; this option is useful when any RT code is executed above 1MB.

Boot Option Priorities
These are settings for boot priority. Specify the boot device priority sequence from the available devices.

Hard Drive BBS Priorities
Set the order of the legacy devices in this group.

4.7 Security Menu

The Security menu allows users to change the security settings for the system.

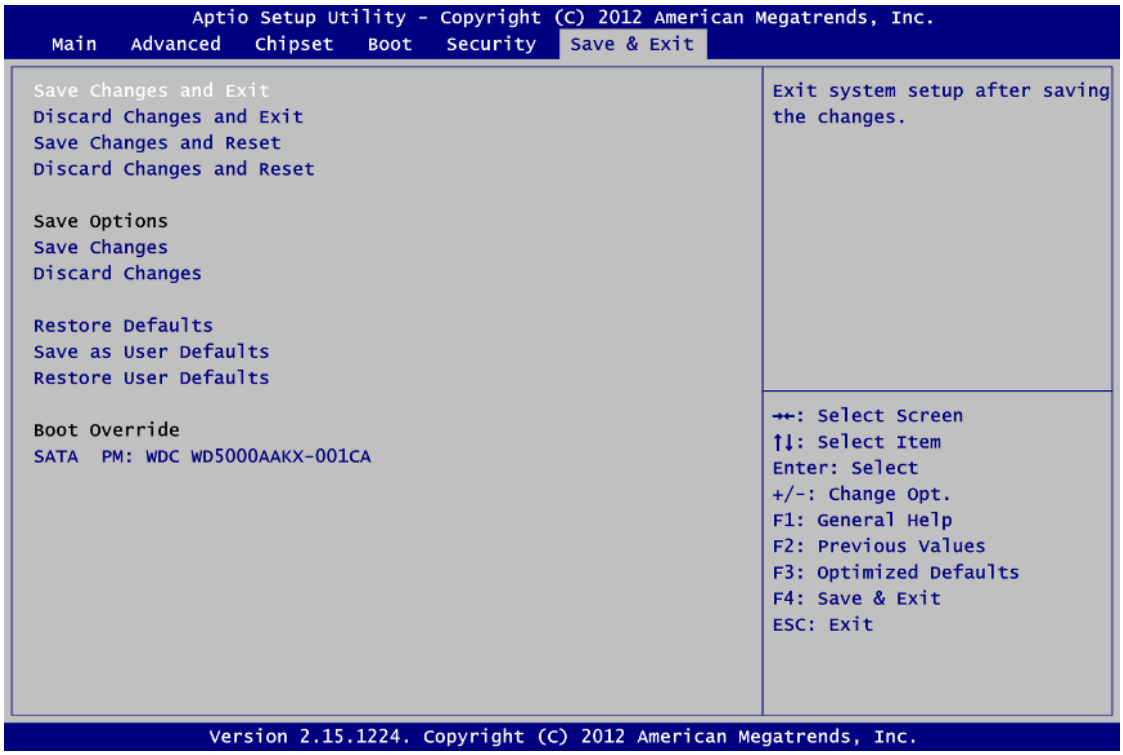


Administrator Password
This item indicates whether an administrator password has been set (installed or uninstalled).

User Password
This item indicates whether an user password has been set (installed or uninstalled).

4.8 Save & Exit Menu

The Save & Exit menu allows users to load your system configuration with optimal or fail-safe default values.



Save Changes and Exit
When you have completed the system configuration changes, select this option to leave Setup and return to Main Menu. Select Save Changes and Exit from the Save & Exit menu and press <Enter>. Select Yes to save changes and exit.

Discard Changes and Exit
Select this option to quit Setup without making any permanent changes to the system configuration and return to Main Menu. Select Discard Changes and Exit from the Save & Exit menu and press <Enter>. Select Yes to discard changes and exit.

Save Changes and Reset
When you have completed the system configuration changes, select this option to leave Setup and reboot the computer so the new system configuration parameters can take effect. Select Save Changes and Reset from the Save & Exit menu and press <Enter>. Select Yes to save changes and reset.

Discard Changes and Reset
Select this option to quit Setup without making any permanent changes to the system configuration and reboot the computer. Select Discard Changes and Reset from the Save & Exit menu and press <Enter>. Select Yes to discard changes and reset.

Save Changes
When you have completed the system configuration changes, select this option to save changes. Select Save Changes from the Save & Exit menu and press <Enter>. Select Yes to save changes.

Discard Changes
Select this option to quit Setup without making any permanent changes to the system configuration. Select Discard Changes from the Save & Exit menu and press <Enter>. Select Yes to discard changes.

Restore Defaults
It automatically sets all Setup options to a complete set of default settings when you select this option. Select Restore Defaults from the Save & Exit menu and press <Enter>.

Save as User Defaults
Select this option to save system configuration changes done so far as User Defaults. Select Save as User Defaults from the Save & Exit menu and press <Enter>.

Restore User Defaults
It automatically sets all Setup options to a complete set of User Defaults when you select this option. Select Restore User Defaults from the Save & Exit menu and press <Enter>.

Boot Override
Select a drive to immediately boot that device regardless of the current boot order.

CHAPTER 5
Drivers Installation

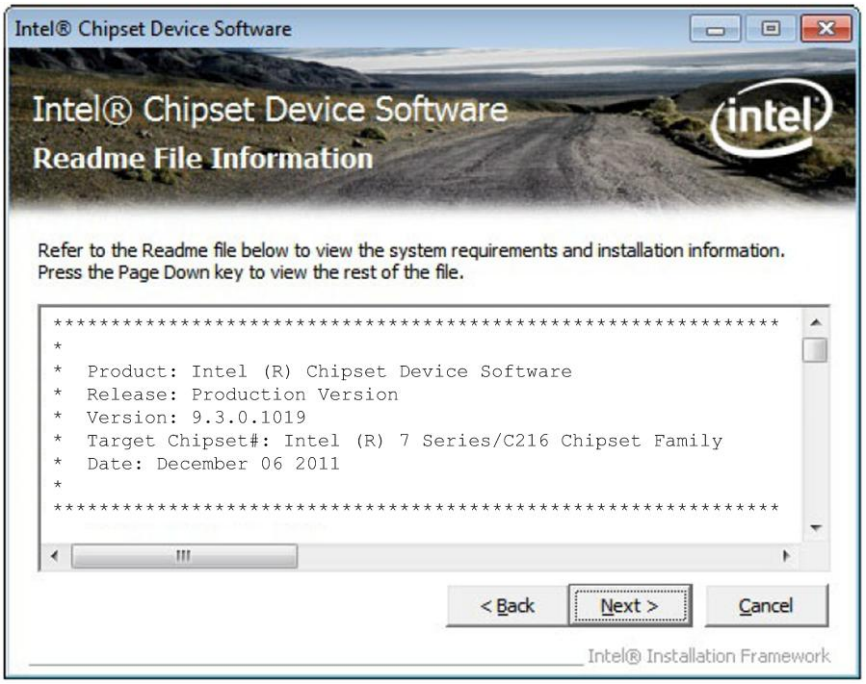
The device drivers are located on the product information CD that comes with the eBOX530-830-FL Series package. The auto-run function of drivers will guide you to install the utilities and device drivers under Windows system. You can follow the onscreen instructions to install these devices:

- Chipset
- Graphics
- Ethernet
- Audio

5.1 Installing Chipset Driver

1. Run the infinst_auto1.exe program from the driver directory in product information CD. Click "Next" to next step.

2. A Readme File Information screen appears to show you the system requirements and installation information. Click "Next" to next step.



3. Please wait while setup processes the following operations.

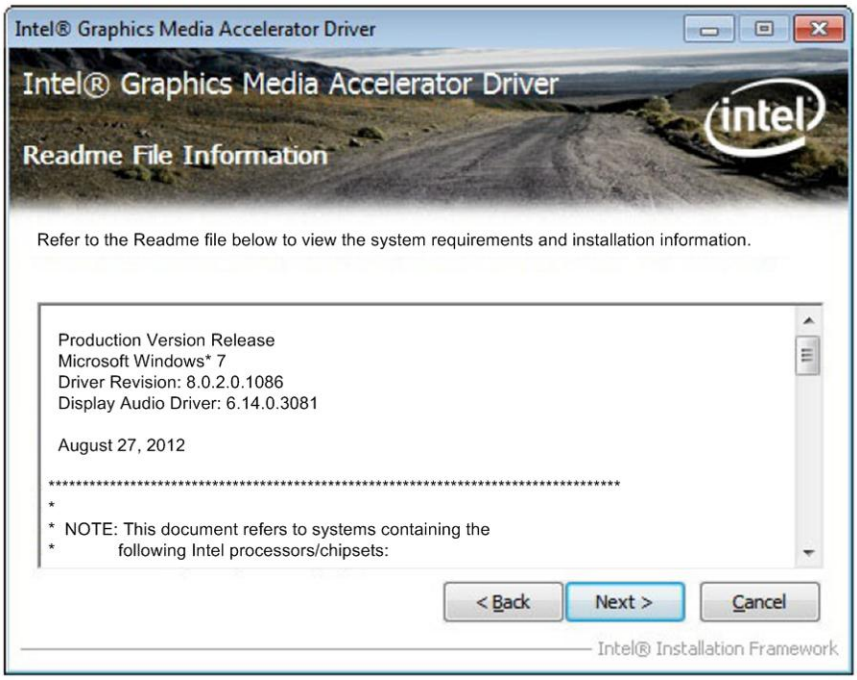
4. You are suggested to select "Yes, I want to restart this computer now". Click "Finish" to complete the setup process and reboot.

5.2 Installing Graphics Media Accelerator Driver

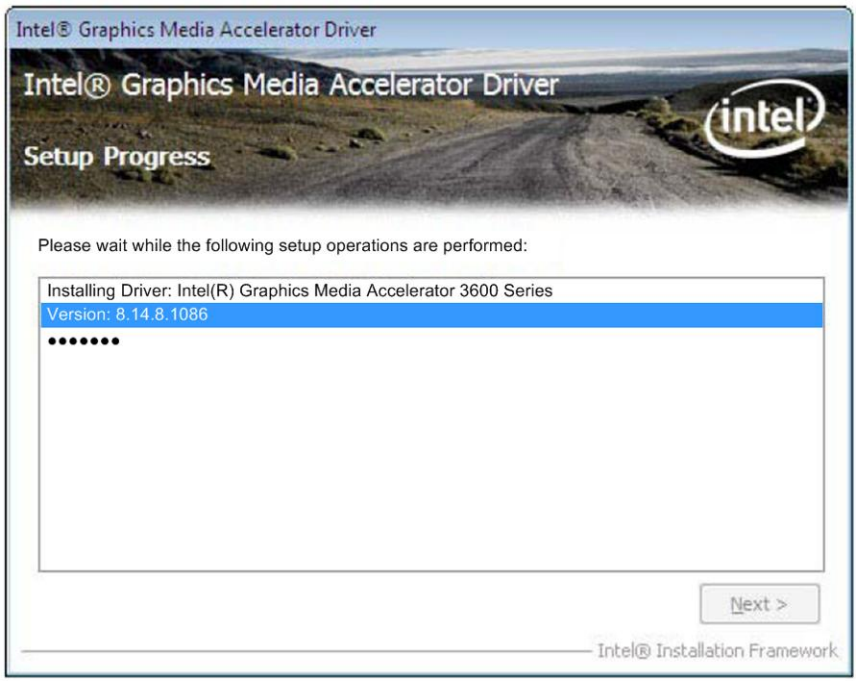
1. Run the setup.exe program from the driver directory in product information CD. Click "Next" to next step.

2. When Intel® License Agreement screen appears, please click "Yes" to next step.

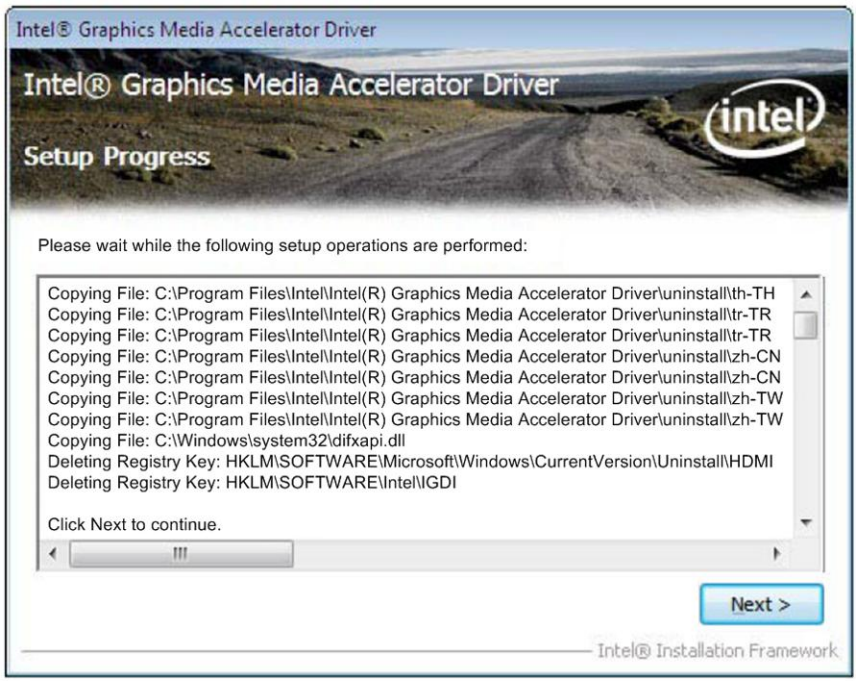
3. A Readme File Information screen appears to show you the system requirements and installation information. Click "Next" to next step.



4. Please wait while setup processes the following operations.



5. When the following screen appears, please click "Next".



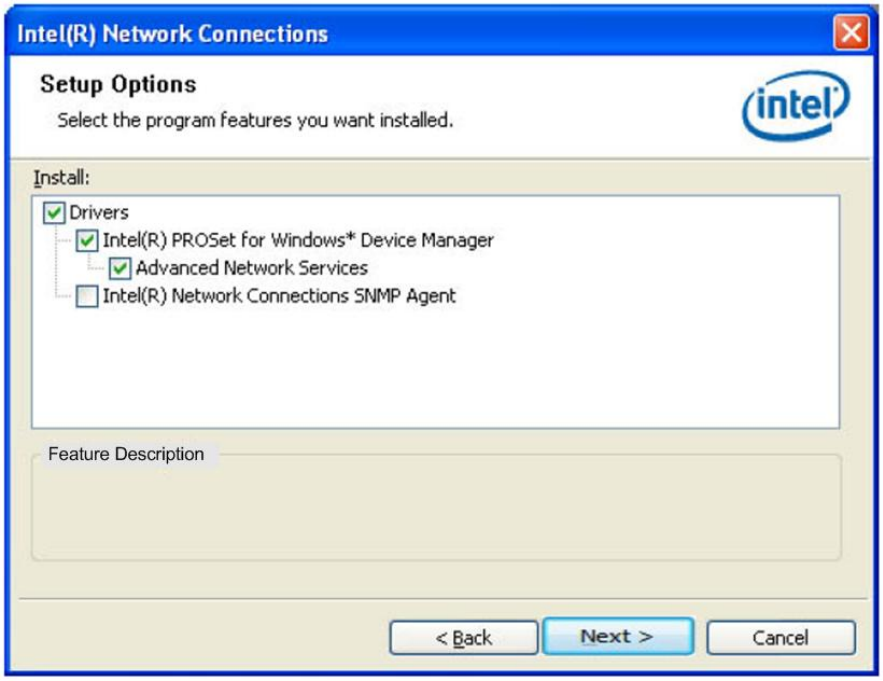
6. You are suggested to select "Yes, I want to restart this computer now". Click "Finish" to complete the setup process and reboot.

NOTE ***After the computer reboots, the display is in extended mode. Please click hot key <Ctrl+Alt+F1> to switch display back to single mode.***

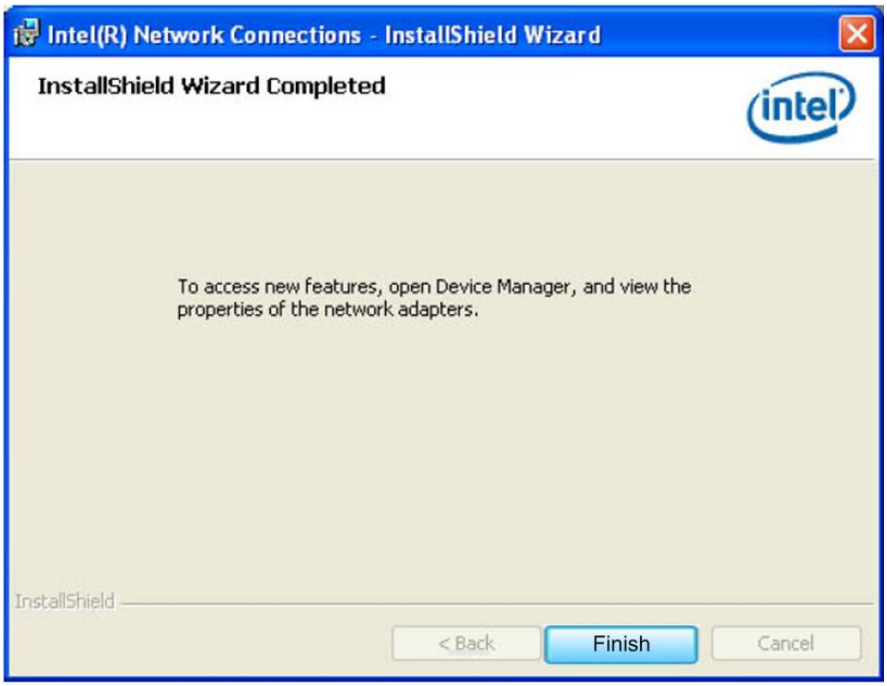
5.3 Installing Ethernet Driver

1. Unzip PROWin32 for ethernet driver from the driver directory in product information CD. Click "Next" to start the installation.

2. When the following screen appears, please select the program features you want to install. Click "Next" to continue.

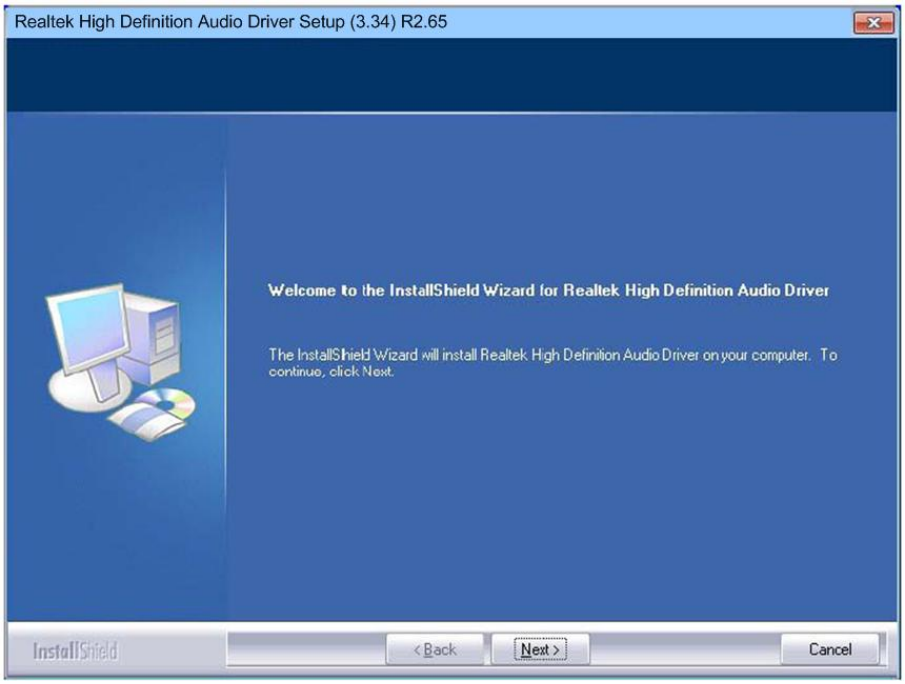


3. Click "Finish" to complete the installation.

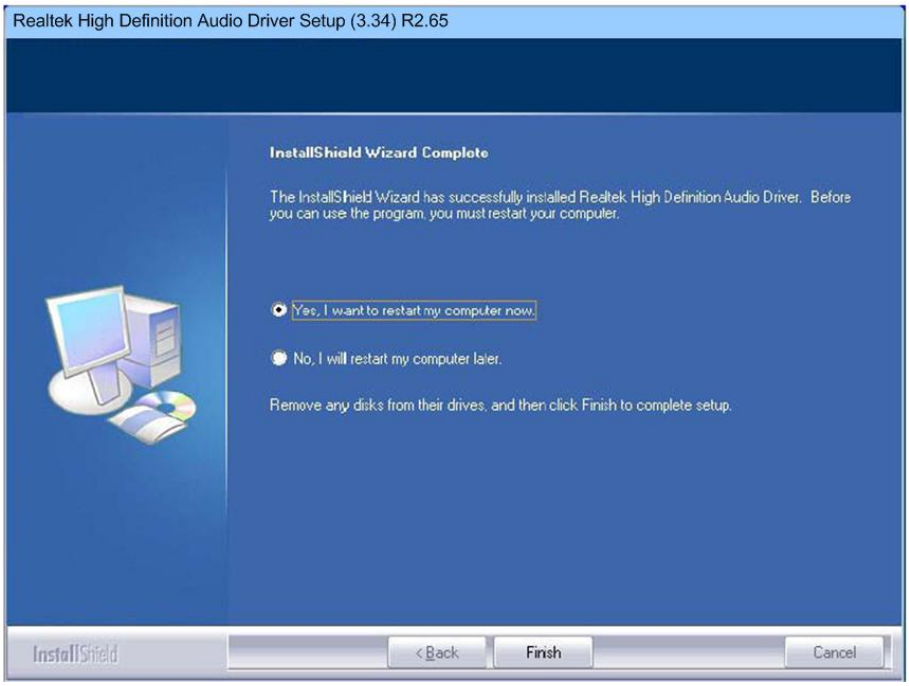


5.4 Installing Audio Driver

1. Run the setup.exe for audio from the driver directory in product information CD. Click "Next" to continue.



2. You are suggested to select "Yes, I want to restart my computer now". Click "Finish" to complete the setup process and reboot.



APPENDIX A
Watchdog Timer

About Watchdog Timer

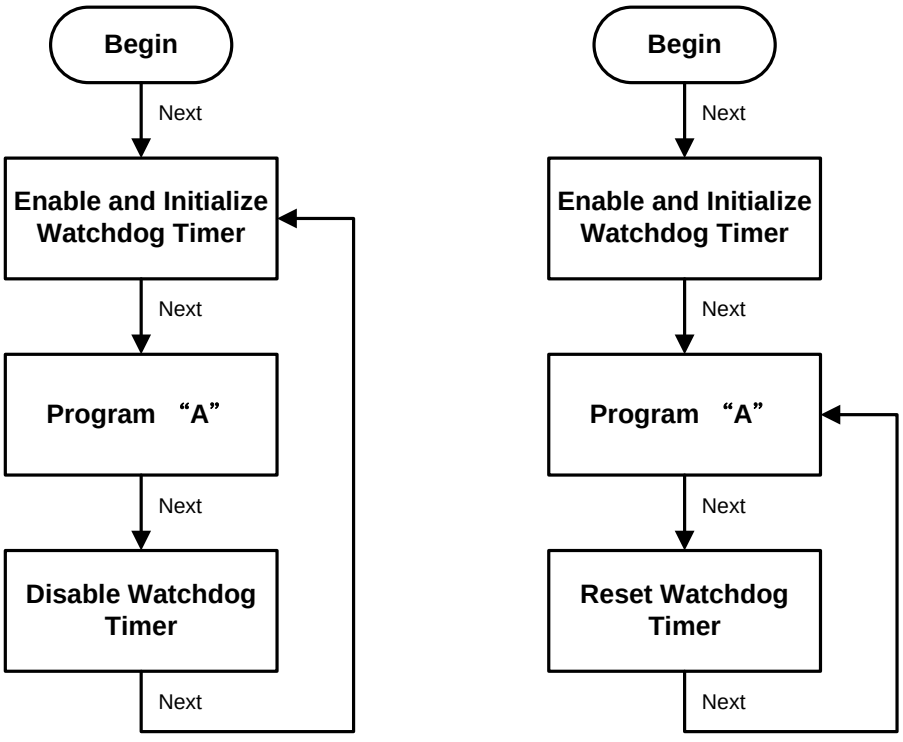
Software stability is major issue in most application. Some embedded systems are not watched by human for 24 hours. It is usually too slow to wait for someone to reboot when computer hangs. The systems need to be able to reset automatically when things go wrong. The watchdog timer gives us solution.

The watchdog timer is a counter that triggers a system reset when it counts down to zero from a preset value. The software starts counter with an initial value and must reset it periodically. If the counter ever reaches zero which means the software has crashed, the system will reboot.

How to Use Watchdog Timer

The I/O port base addresses of watchdog timer are 2E (hex) and 2F (hex). The 2E (hex) and 2F (hex) are address and data port respectively.

Assume that program A is put in a loop that must execute at least once every 10ms. Initialize watchdog timer with a value bigger than 10ms. If the software has no problems; watchdog timer will never expire because software will always restart the counter before it reaches zero.



Sample Program

Assembly sample code :

```
;Enable WDT:
mov    dx,2Eh
mov    al,87          ;Un-lock super I/O
out    dx,al
out    dx,al

;Select Logic device:
mov    dx,2Eh
mov    al,07h
out    dx,al
mov    dx,2Fh
mov    al,08h
out    dx,al

;Activate WDT:
mov    dx,2Eh
mov    al,30h
out    dx,al
mov    dx,2Fh
mov    al,01h
out    dx,al

;Set Second or Minute :
mov    dx,2Eh
mov    al,0F5h
out    dx,al
mov    dx,2Fh
mov    al,Nh          ;N=00h or 08h(see below Note)
out    dx,al

;Set base timer :
mov    dx,2Eh
```

```
mov     al,0F6h
out     dx,al
mov     dx,2Fh
mov     al,Mh           ;M=00h,01h,...FFh (hex),Value=0 to 255
out     dx,al           ;(see below Note)

;Disable WDT:
mov     dx,2Eh
mov     al,30h
out     dx,al
mov     dx,2Fh
mov     al,00h          ;Can be disabled at any time
out     dx,al
```

***Note**:*

*If **N**=00h, the time base is set to second.*

***M** = time value*

00: Time-out Disable

01: Time-out occurs after 1 second

02: Time-out occurs after 2 seconds

03: Time-out occurs after 3 seconds

.

.

FFh: Time-out occurs after 255 seconds

*If **N**=08h, the time base is set to minute.*

***M** = time value*

00: Time-out Disable

01: Time-out occurs after 1 minute

02: Time-out occurs after 2 minutes

03: Time-out occurs after 3 minutes

.

.

FFh: Time-out occurs after 255 minutes

This page is intentionally left blank.