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# **ELIT-1200 Series**

## **Digital Signage Player Powered by AMD R-series APU**

# **User's Manual**

## **Version 1.0**

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## Revision History

Version	Date	Description
1.0	2013/06	initial release

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## Copyright Notice

All Rights Reserved.

The information in this document is subject to change without prior notice in order to improve the reliability, design and function. It does not represent a commitment on the part of the manufacturer.

Under no circumstances will the manufacturer be liable for any direct, indirect, special, incidental, or consequential damages arising from the use or inability to use the product or documentation, even if advised of the possibility of such damages.

This document contains proprietary information protected by copyright. All rights are reserved. No part of this document may be reproduced by any mechanical, electronic, or other means in any form without prior written permission of the manufacturer.

## Declaration of Conformity

### CE

The CE symbol on your product indicates that it is in compliance with the directives of the Union European (EU). A Certificate of Compliance is available by contacting Technical Support.

This product has passed the CE test for environmental specifications when shielded cables are used for external wiring. We recommend the use of shielded cables. This kind of cable is available from ARBOR. Please contact your local supplier for ordering information.

#### Warning

This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

## FCC Class A

This device complies with Part 15 of the 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.

#### NOTE:

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and

used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

### **RoHS**

ARBOR Technology Corp. certifies that all components in its products are in compliance and conform to the European Union's Restriction of Use of Hazardous Substances in Electrical and Electronic Equipment (RoHS) Directive 2002/95/EC.

The above mentioned directive was published on 2/13/2003. The main purpose of the directive is to prohibit the use of lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB), and polybrominated diphenyl ethers (PBDE) in electrical and electronic products. Member states of the EU are to enforce by 7/1/2006.

ARBOR Technology Corp. hereby states that the listed products do not contain unintentional additions of lead, mercury, hex chrome, PBB or PBDB that exceed a maximum concentration value of 0.1% by weight or for cadmium exceed 0.01% by weight, per homogenous material. Homogenous material is defined as a substance or mixture of substances with uniform composition (such as solders, resins, plating, etc.). Lead-free solder is used for all terminations (Sn(96-96.5%), Ag(3.0-3.5%) and Cu(0.5%)).

### **SVHC / REACH**

To minimize the environmental impact and take more responsibility to the earth we live, Arbor hereby confirms all products comply with the restriction of SVHC (Substances of Very High Concern) in (EC) 1907/2006 (REACH --Registration, Evaluation, Authorization, and Restriction of Chemicals) regulated by the European Union.

All substances listed in SVHC < 0.1 % by weight (1000 ppm)

## **Important Safety Instructions**

Read these safety instructions carefully

1. Read all cautions and warnings on the equipment.
2. Place this equipment on a reliable surface when installing. Dropping it or letting it fall may cause damage
3. Make sure the correct voltage is connected to the equipment.
4. For pluggable equipment, the socket outlet should be near the equipment and should be easily accessible.
5. Keep this equipment away from humidity.
6. The openings on the enclosure are for air convection and protect the equipment from overheating. **DO NOT COVER THE OPENINGS.**
7. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
8. Never pour any liquid into opening. This may cause fire or electrical shock.
9. Never open the equipment. For safety reasons, the equipment should be opened only by qualified service personnel.
10. If one of the following situations arises, get the equipment checked by service personnel:
  - a. The power cord or plug is damaged.
  - b. Liquid has penetrated into the equipment.
  - c. The equipment has been exposed to moisture.
  - d. The equipment does not work well, or you cannot get it to work according to the user's manual.
  - e. The equipment has been dropped or damaged.
  - f. The equipment has obvious signs of breakage.
11. Keep this User's Manual for later reference.

## **Warning**

The Box PC and its components contain very delicately Integrated Circuits (IC). To protect the Box PC and its components against damage caused by static electricity, you should always follow the precautions below when handling it:

1. Disconnect your Box PC from the power source when you want to work on the inside.
2. Use a grounded wrist strap when handling computer components.
3. Place components on a grounded antistatic pad or on the bag that came with the Box PC, whenever components are separated from the system.

## **Replacing the Lithium Battery**

Incorrect replacement of the lithium battery may lead to a risk of explosion.

The lithium battery must be replaced with an identical battery or a battery type recommended by the manufacturer.

Do not throw lithium batteries into the trashcan. It must be disposed of in accordance with local regulations concerning special waste.

## **Technical Support**

If you have any technical difficulties, please consult the user's manual first at: <ftp://ftp.arbor.com.tw/pub/manual>

Please do not hesitate to call or e-mail our customer service when you still cannot find out the answer.

<http://www.arbor.com.tw>

E-mail:[info@arbor.com.tw](mailto:info@arbor.com.tw)

## **Warranty**

This product is warranted to be in good working order for a period of one year from the date of purchase. Should this product fail to be in good working order at any time during this period, we will, at our option, replace or repair it at no additional charge except as set forth in the following terms. This warranty does not apply to products damaged by misuse, modifications, accident or disaster.

Vendor assumes no liability for any damages, lost profits, lost savings or any other incidental or consequential damage resulting from the use, misuse of, or inability to use this product. Vendor will not be liable for any claim made by any other related party.

Vendors disclaim all other warranties, either expressed or implied, including but not limited to implied warranties of merchantability and fitness for a particular purpose, with respect to the hardware, the accompanying product's manual(s) and written materials, and any accompanying hardware. This limited warranty gives you specific legal rights.

Return authorization must be obtained from the vendor before returned merchandise will be accepted. Authorization can be obtained by calling or faxing the vendor and requesting a Return Merchandise Authorization (RMA) number. Returned goods should always be accompanied by a clear problem description.

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# Chapter 1

## Introduction

### 1.1 The Product

The ELIT-1200 is a modest box computer to feature the basic and essential features required for industrial field.



Loaded with soldered onboard AMD R-260H 2.1 GHz processor and chipset of AMD A70M, the fanless computer consumes low power while delivering advanced graphics and intensive computing.

The book-sized computer comes in a small form factor, at only 188 x 149.5 x 30 mm. It is highly portable and suitable for constraint space. The computer features one Mini-card socket for wireless or HSUPA module, two serial ports, four USB3.0 ports, two USB2.0 ports, two LAN ports, one DVI-D and two HDMI ports for video output, S-Video interface for A/V input, and an audio line-out jack. These features make the computer optimal for digital signage, info kiosk, gaming, media server and industrial control.

#### Product Highlights

- Robust and Compact Design
- Low Cost, High Reliability
- Outstanding FULL-HD Video Performance with Low Power Consumption
- Support for Numerous Media Formats (e.g., Video, Flash, URL, Images)
- Support SIM Card Socket, 4 x USB3.0, 2 x USB2.0
- Support 2 x HDMI, 1 x DVI-D Output
- Support S-Video and A/V Input
- Support DirectX 11
- Support RTC Wakeup
- Operating Temperature: -20 ~ 50°C

### 1.2 About This Manual

This manual is meant for experienced users and integrators with hardware knowledge of personal computers. If you are not sure about the description herein, consult your vendor before further handling.

We recommend you keep one copy of this manual for the quick reference for any necessary maintenance in the future. Thank you for choosing ARBOR products.



## 1.3 Specifications

<b>System Kernel</b>	
Processor	Soldered onboard AMD R-260H 2.1 GHz processor
Chipset	AMD A70M
Graphics	Integrated AMD Radeon HD 7500G
System Memory	1 x 204-pin DDR3 SO-DIMM Socket, supporting 1333MHz SDRAM up to 8GB
Serial ATA	1 x Serial ATA port with 600MB/s HDD transfer rate
Ethernet Controller	2 x Realtek 8111 Gigabit Ethernet controllers
Watchdog Timer	1 ~ 255 levels reset
<b>I/O Ports</b>	
Serial Port	2 x DB-9 male connectors for RS-232
Expansion Bus	1 x Mini-card slot interconnected with SIM card socket for optional WiFi or HSUPA module
USB Port	4 x USB 3.0 ports
	2 x USB 2.0 ports
LAN	2 x RJ-45 ports for Gigabit Ethernet
Video Port	2 x HDMI female connectors for Digital Video output
	1 x DVI-D female connector for Digital Video output
	1 x 7-pin Mini-Din connector for A/V input (combining S-Video, Composite and Audio)
Audio	1 x Line-out (500 mW pre-amplified)
<b>Storage</b>	
Type	1 x 2.5" drive bay for HDD/SSD
<b>Qualification</b>	
Certification	CE, FCC Class A
<b>Environmental</b>	
Operating Temp.	-20 ~ 50°C (-4 ~ 122°F), ambient w/ air flow
Storage Temp.	-40 ~ 80°C (-40 ~ 176°F)
Relative Humidity	10 ~ 95% @ 50°C (non-condensing)
Vibration	3 Grms/5 ~ 500 Hz/random operation
Shock & Crash	Operating 40G (11ms), Non-operating 80G with SSD

<b>Mechanical</b>	
Construction	Aluminum alloy
Mounting	Support wall-mounting/VESA-mount
Weight	1.6Kg (3.52lb)
Dimensions (W x D x H)	193 x 170 x 50 mm (7.60" x 6.69" x 1.96")
<b>OS Support</b>	Windows Embedded Standard 7 / Windows 7 / Ubuntu / Windows 8 / Windows XP
<b>Power Requirement</b>	
Power Input	DC 16~24V input
Power Consumption	Max. 40W (w/o I/O card)
Power Management	RTC wakeup timer selectable

### 1.4 Inside the Package

Upon opening the package, carefully inspect the contents. If any of the items is missing or damaged, contact your local dealer or distributor. The package should contain the following items:



1 x ELIT-1200 Embedded System






1 x Driver CD  
1 x User's Manual

### 1.5 Ordering Information

ELIT-1200-R260H	Digital Signage Player by AMD R-260H, w/o SSD and memory
ELIT-1200-R260H-16S2G	Digital Signage Player by AMD R-260H, w/ 16GB SSD and 2GB memory



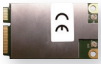


### 1.5.1 Optional Accessories

The following items are normally optional, but some vendors may include them as a standard package, or some vendors may not carry all the items.

PAC-B065W-2	19V/3.4A 65W AC/DC adapter kit	
VMK-1000	VESA mount kit for ELIT series	
CBL-1200-VIDEO	S-Video and A/V Input Cable Kit	

### 1.5.2 Configure-to-Order Service

Make the computer more tailored to your needs by selecting one or more components from the list below to be fabricated to the computer.

SSD-25032	Memoright 2.5" 32GB SATAII SSD kit	
WIFI-IN1130	Intel® Centrino® Advanced-N 6205 WiFi module w/ 10cm & 20cm internal wiring	
HSPA-SI1400	HSUPA 3.75G module kit & internal wiring	
ANT-D11	1 x WiFi Dual-band 2.4G/5G antenna	
ANT-H11	1 x 2dBi HSUPA antenna	
2GB SO-DIMM	DDR3-1333 2GB SDRAM	
4GB SO-DIMM	DDR3-1333 4GB SDRAM	
8GB SO-DIMM	DDR3-1600 8GB SDRAM	

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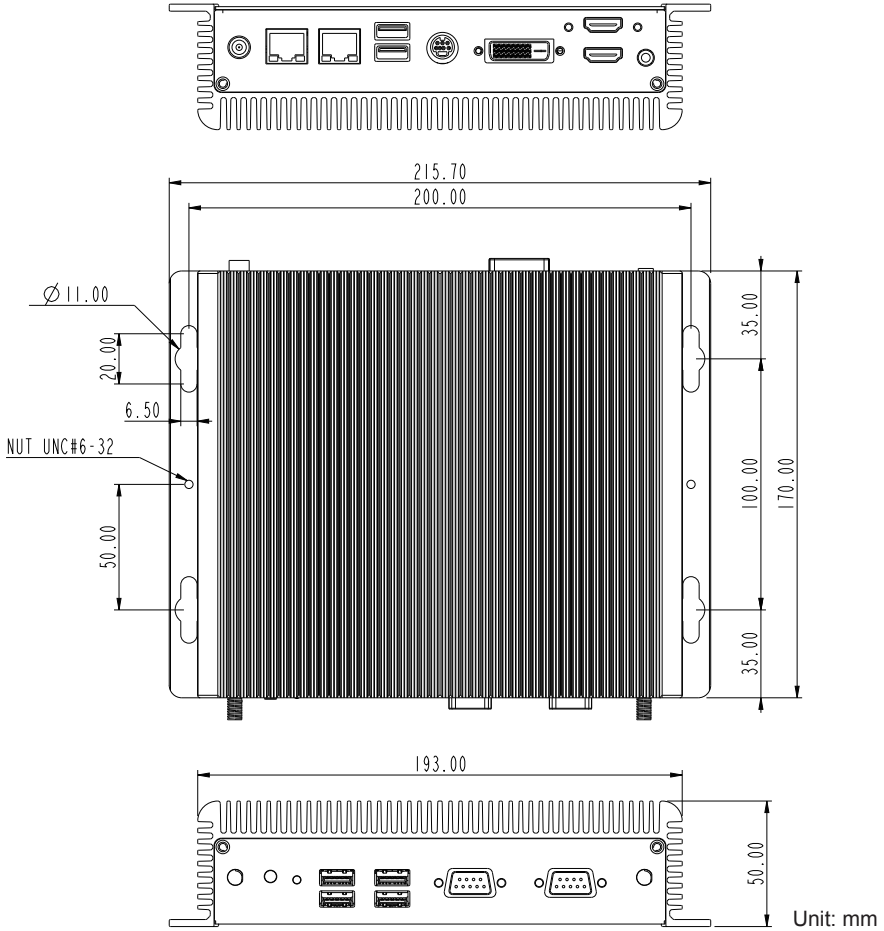


# Chapter 2

## Getting Started

## 2.1 Dimensions

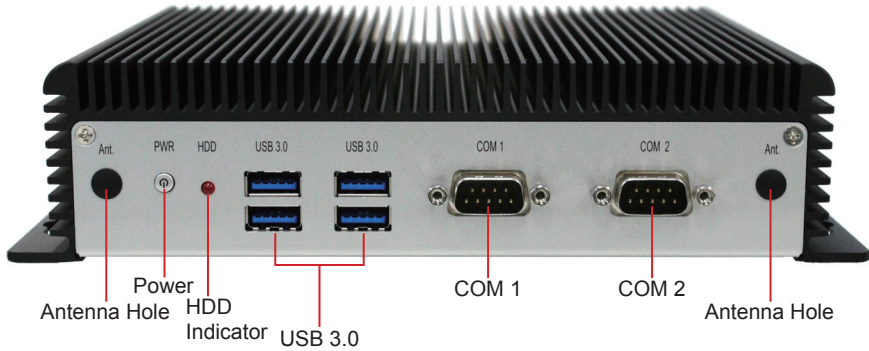
The following illustration shows the dimension of ELIT-1200, with the measurements in width, depth, and height called out.



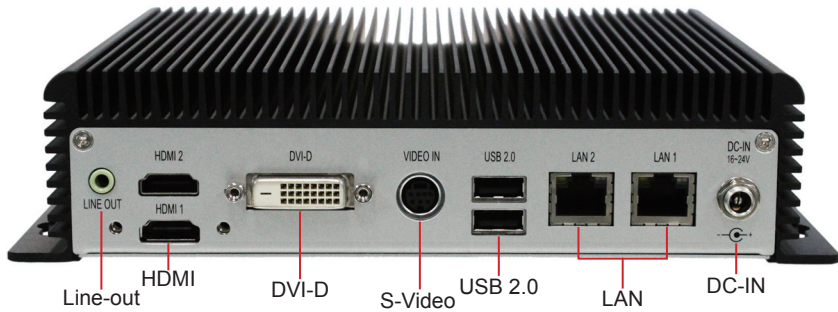
## 2.2 Take a Tour

The computer has some I/O ports, status LED lights and controls on the front and rear panels. The following illustrations show all the components called out for ELIT-1200.

### 2.2.1 Front View



### 2.2.2 Rear View



### 2.2.3 Side View





### 2.3. Driver Installation Notice

The ELIT-1200 supports the operating systems of Windows 8/7/XP and Ubuntu. For these operating systems, find the necessary device drivers on the CD that comes with your purchase. For different operating systems, the installation of drivers may vary slightly, but generally they are similar. **DO** install **Chipset**→**Graphics** before the rest to prevent errors. The path to find the device drivers on CD:

#### Windows 8

Device	Driver Path
CHIPSET	AMD_Display_Chipset_G and R series\Win8
HD_AUDIO	\HD_AUDIO\RealTek\Win7_8_Vista
LAN	\Ethernet\RealTek\Win8
SVIDEO	\CX23102\Windows\SWD-202666-001 CX23102 RD-W210B Video Grabber Vista and Win7 32-bit and 64-bit Drivers 6.0.119.x

#### Windows 7

Device	Driver Path
CHIPSET	AMD_Display_Chipset_G and R series\Win7
HD_AUDIO	\HD_AUDIO\RealTek\Win7_8_Vista
LAN	\Ethernet\RealTek\Win7
SVIDEO	\CX23102\Windows\SWD-202666-001 CX23102 RD-W210B Video Grabber Vista and Win7 32-bit and 64-bit Drivers 6.0.119.x



## Windows XP

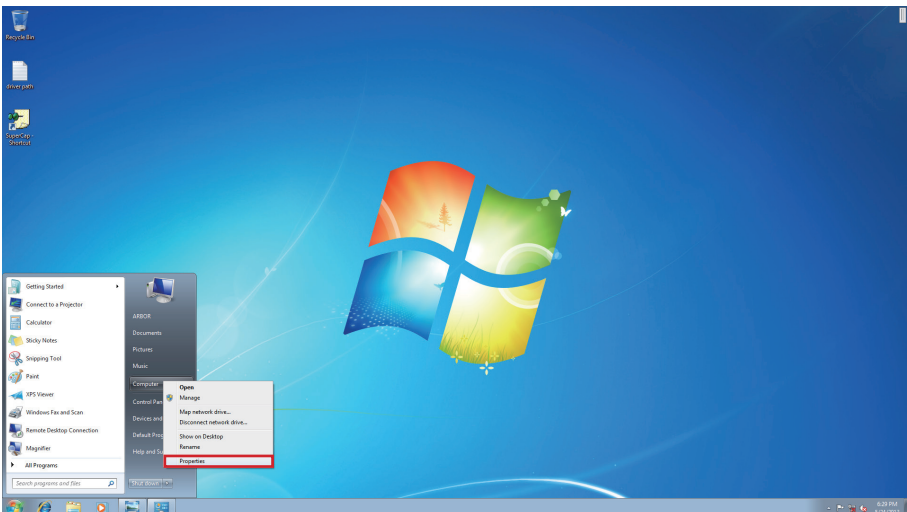
Device	Driver Path
CHIPSET	AMD_Display_Chipset_G and R series\WinXP
HD_AUDIO	\HD_AUDIO\RealTek\WinXP
LAN	\Ethernet\RealTek\WinXP
SVIDEO	\CX23102\Windows\SWD-202666-001 CX23102 RD-W210B Video Grabber Vista and Win7 32-bit and 64-bit Drivers 6.0.119.x

## Ubuntu

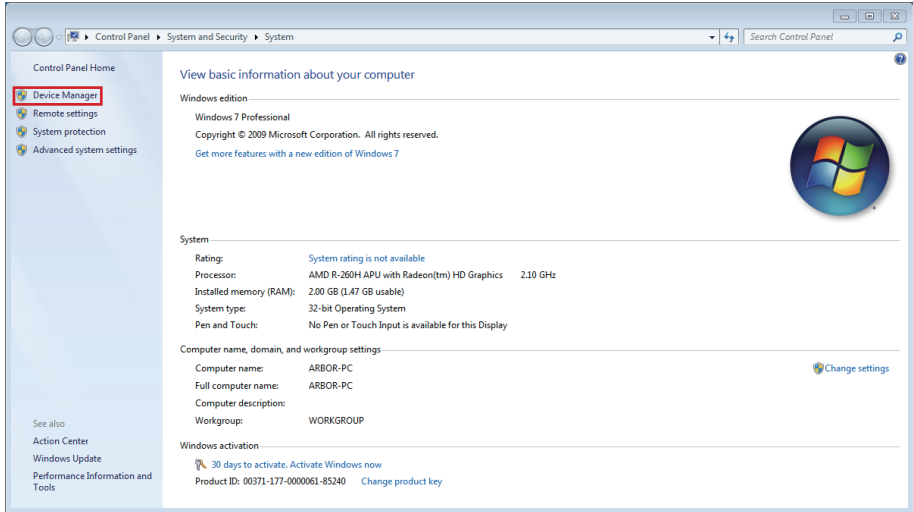
Device	Driver Path
CHIPSET	AMD_Display_Chipset_G and R series\Linux
HD_AUDIO	\HD_AUDIO\RealTek\Linux
LAN	\Ethernet\RealTek\Linux
SVIDEO	\CX23102\Linux\SWD-202571-001 CX23102 Linux Drivers Version 2.6.6.0

Owing to software design flaws, when everything is installed, a patch file should be replaced to solve unrecognized device problem. The following examples are based on Windows 7.

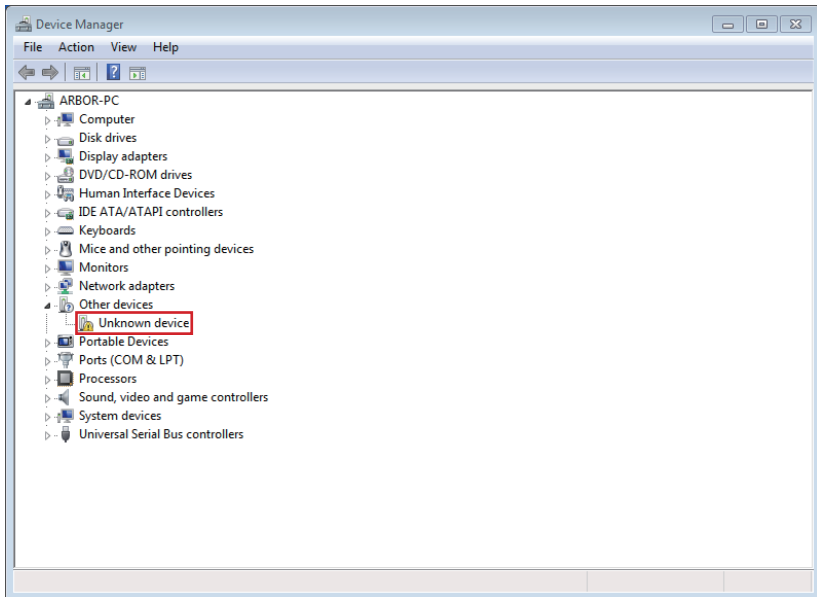
1. Right-click **Computer**/ Left-click **Properties**.



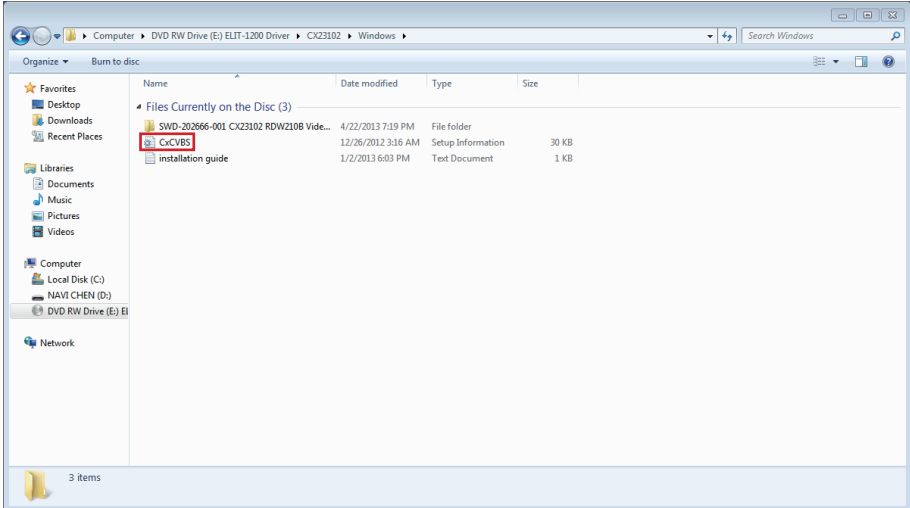
## 2. Select **Device Manager**.



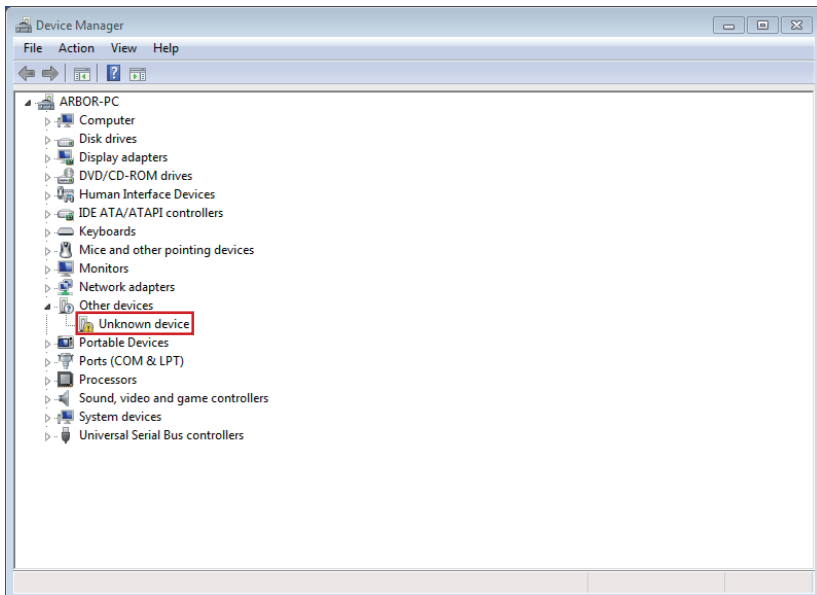
## 3. You will find an **Unknown device** in **Other devices**.



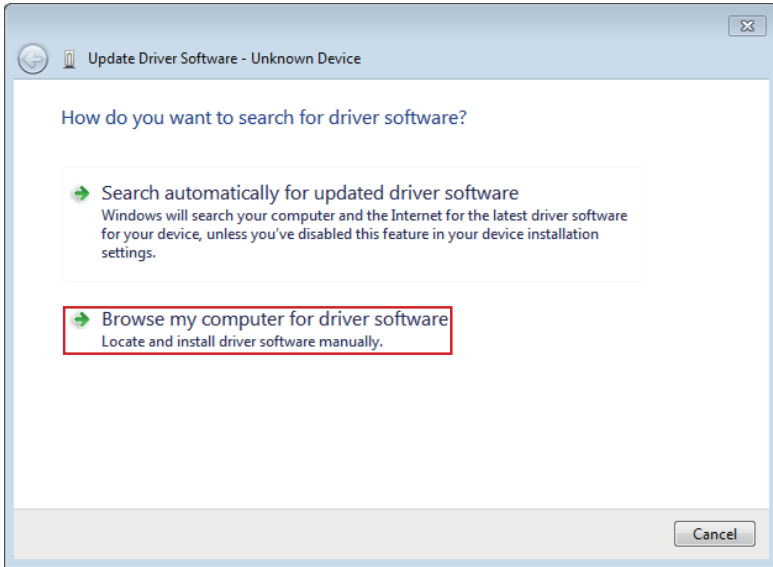
- Copy a file named **CxCVBS** from CD-ROM Drive: \CX23102\Windows\Cx-CVBS. Use the file to replace the same file in  
C:\conexant\Polaris\_CVBS\chk  
C:\conexant\Polaris\_CVBS\fre



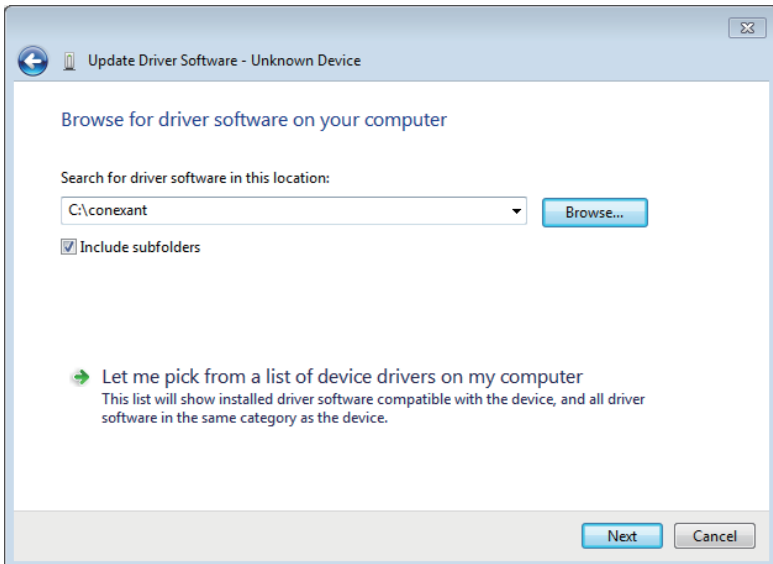
- Right click **Unknown device**/ Left click **Update Driver Software...**



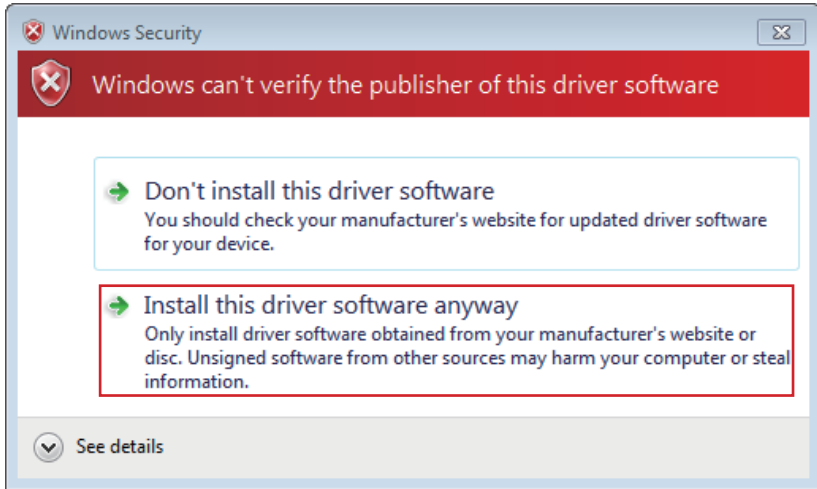
6. A pop-up window will ask you how to search for driver software. Choose the second option.



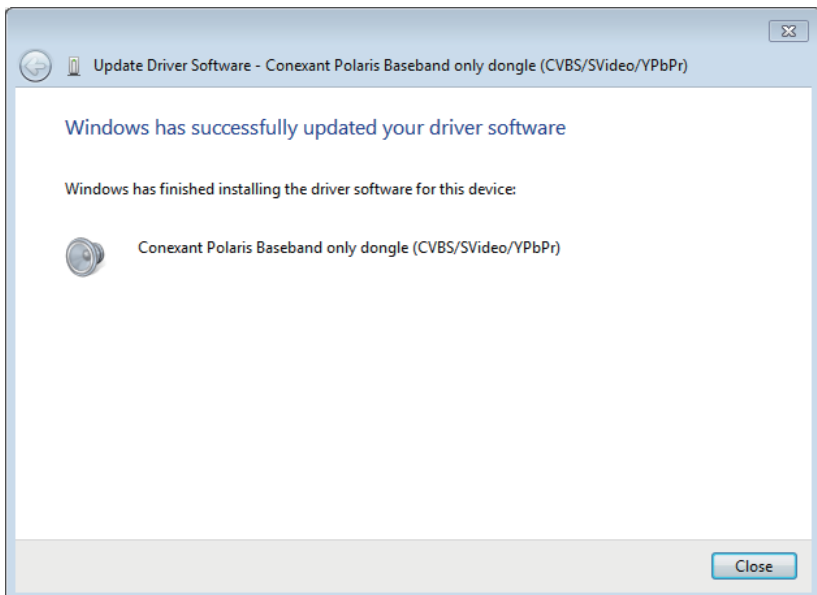
7. Key in driver path and check the box as below. Click **Next**.



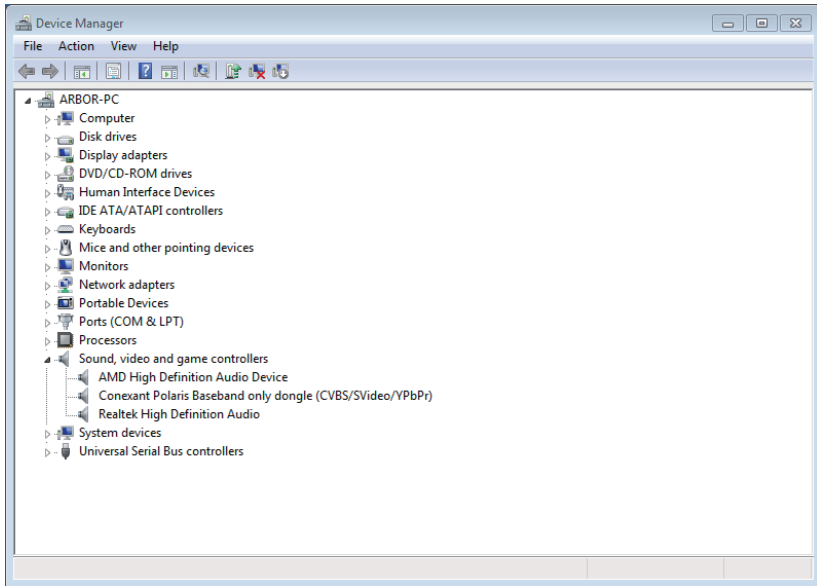
8. Another pop-up warning window will ask you to verify again. Select the second option, too.



9. Click **Close**.



## 10. The unknown device disappears.



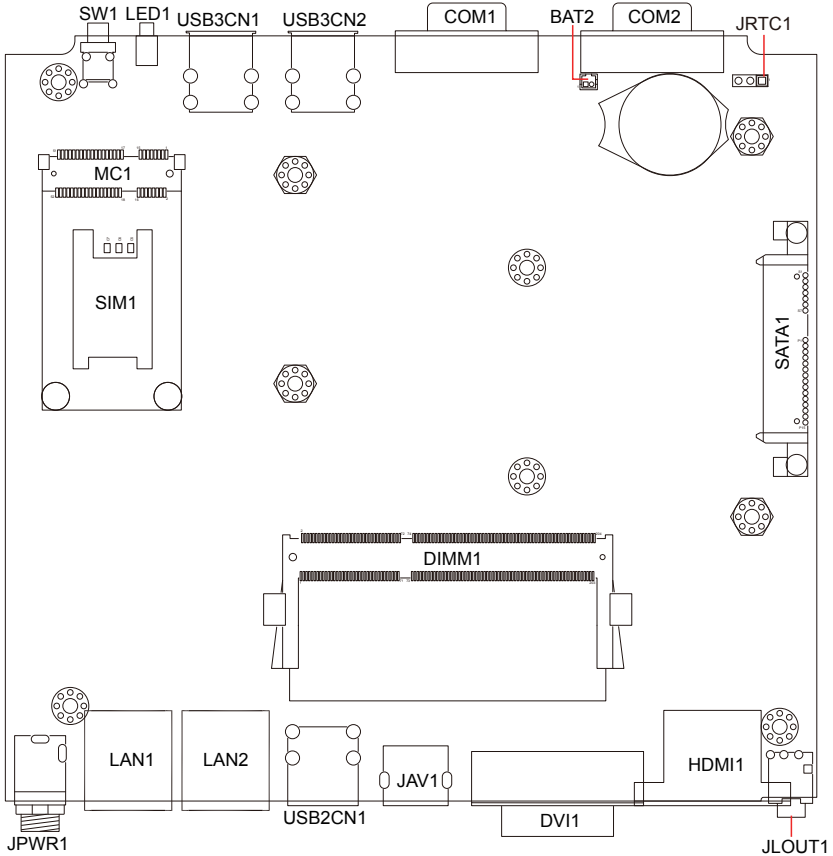


# Chapter 3

# System Configuration

### 3.1 Board Layout

The main board FMB-a70M0 comes with some connectors to join devices and one jumper to alter hardware configuration. The following in this chapter will explicate each of these components one-by-one.





## 3.2 Jumper and Connectors



### 3.2.1 Jumper

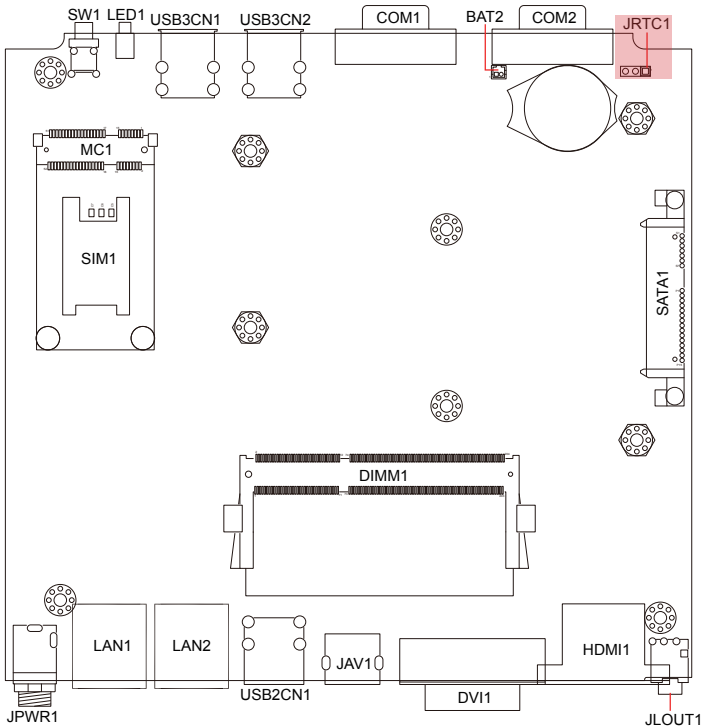
#### JRTC1

**Function:** clear CMOS setting

**Jumper Type:** onboard 2.54mm pitch 1x3-pin header

**Setting:**

Pin	Function	
1-2	keeps CMOS (default)	
2-3	clears CMOS	



### 3.2.2 Connectors

#### JPWR1

Function: 19V adapter in DC Jack

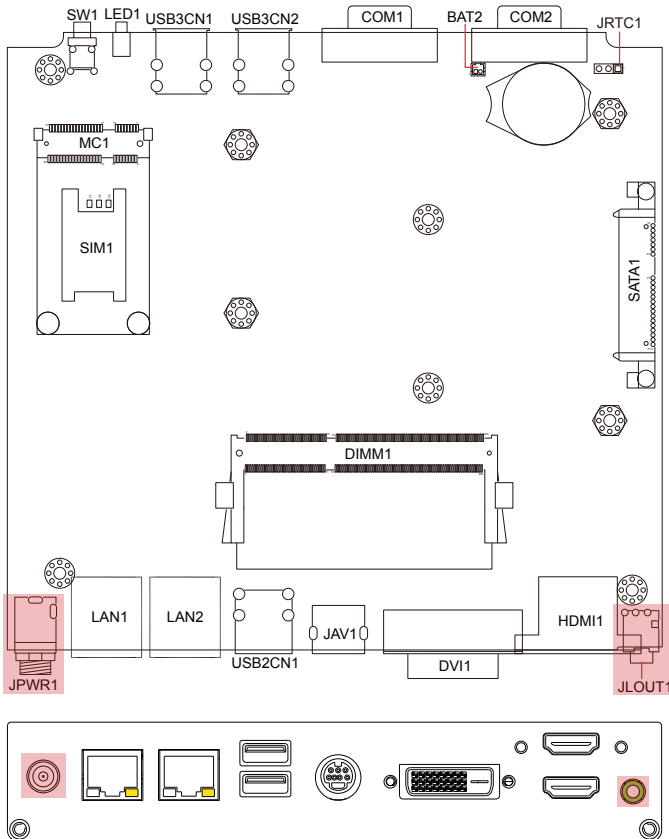
Pin	Description
center	19V
inner circle	GND



#### JLOUT1

Function: audio output

Jumper Type: 3.5φ green audio jack w/ shield



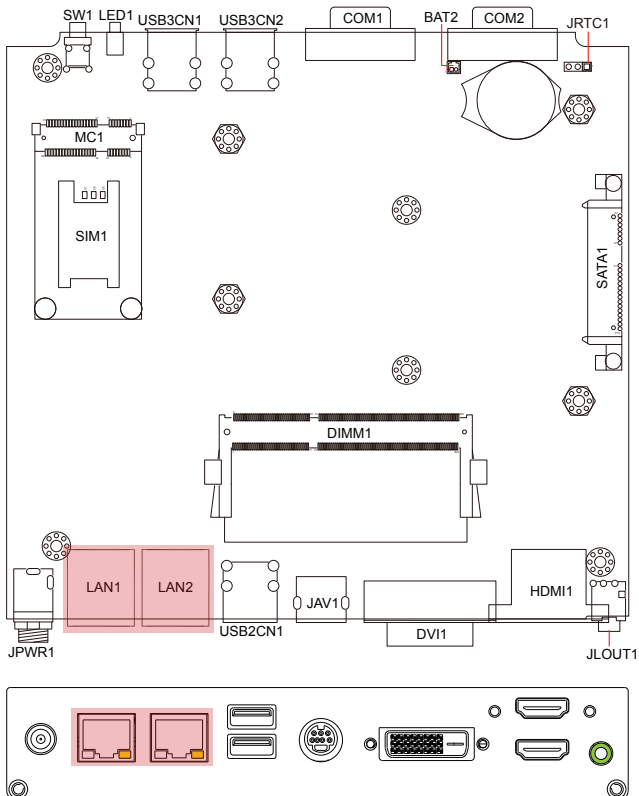
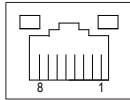
## LAN1~2

**Function:** RJ-45 Ethernet connectors

**Connector Type:** 10/100/1000Mbps Fast Ethernet

Pin	Description
-----	-------------

1	MDI0
2	MDI0#
3	MDI1
4	MDI1#
5	MDI2
6	MDI2#
7	MDI3
8	MDI3#

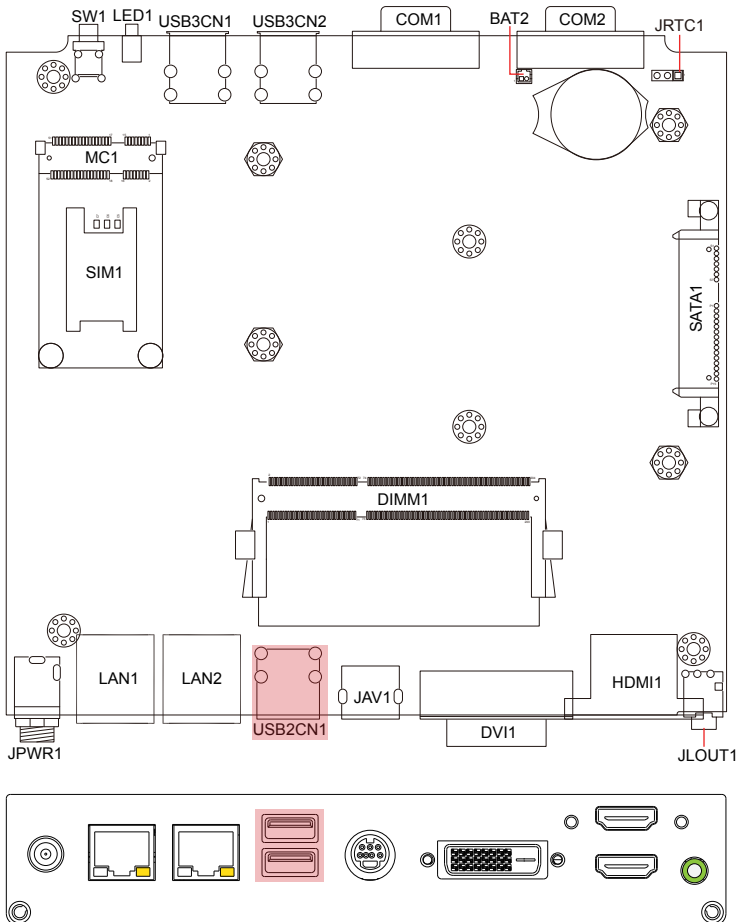
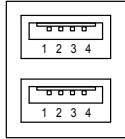


### USB2CN1

Function: USB2.0 Port 0/1

Connector Type: double stack USB2.0 type A connector

Pin	Description
1	5V
2	USB D-
3	USB D+
4	GND

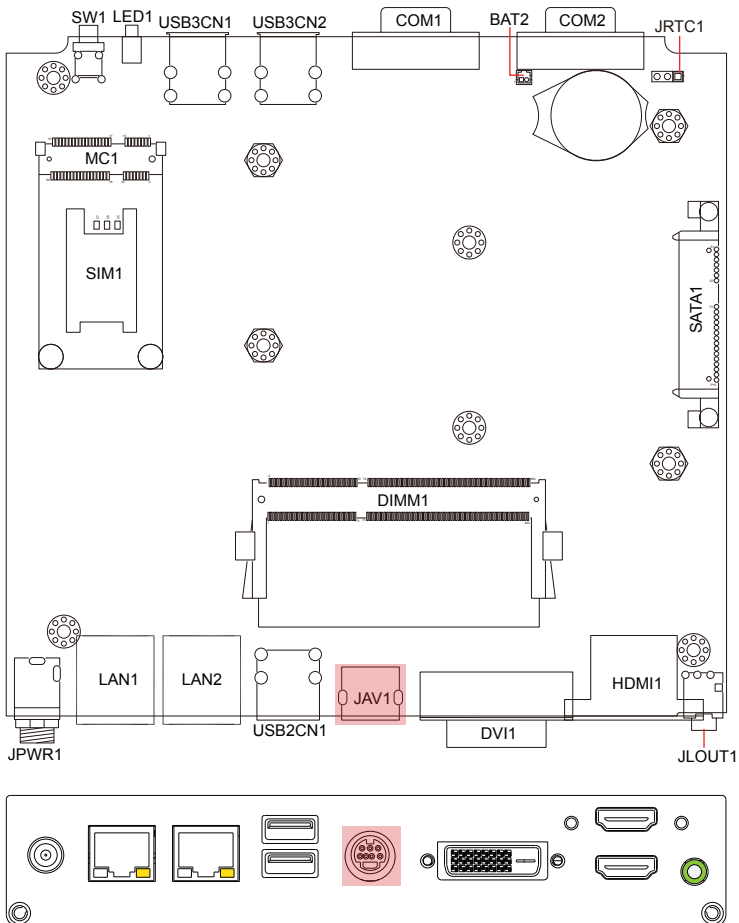
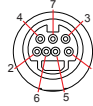


## JAV1

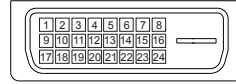
Function: S-Video/CVBS/AUDIO input

Connector Type: MINI DIN-7

Pin	Description	Pin	Description
1	GND	5	AUDIO Left
2	GND	6	AUDIO Right
3	S-VIDEO Y	7	CVBS
4	S-VIDEO C		

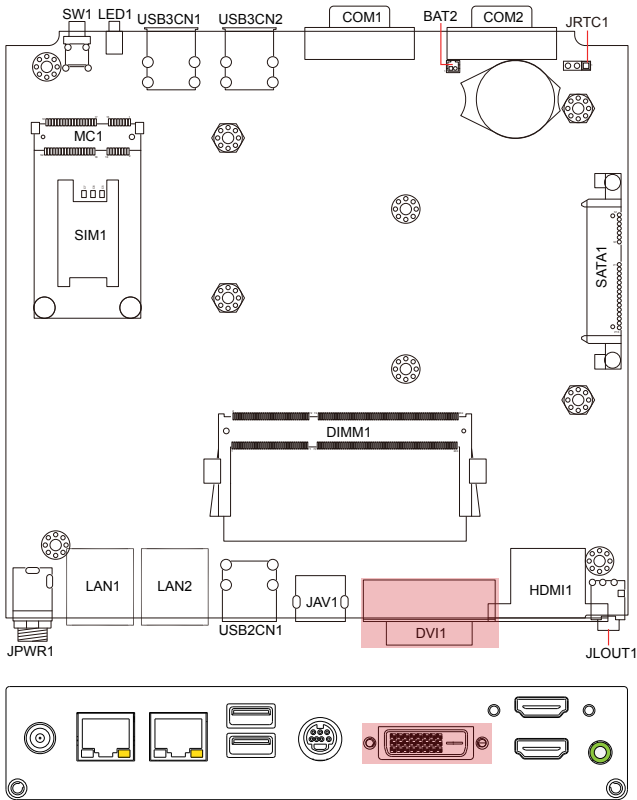


**DVI1**



**Function:** DVI-D display connector

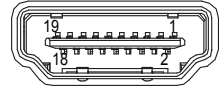
Pin	Description	Pin	Description	Pin	Description
1	TMDS DATA2-	9	TMDS DATA1-	17	TMDS DATA0-
2	TMDS DATA2+	10	TMDS DATA1+	18	TMDS DATA0+
3	TMDS DATA2/4 shield	11	TMDS DATA1/3 shield	19	TMDS DATA0/5 shield
4	(NC) TMDS DATA4-	12	(NC) TMDS DATA3-	20	(NC) TMDS DATA5-
5	(NC) TMDS DATA4+	13	(NC) TMDS DATA3+	21	(NC) TMDS DATA5+
6	DDC Clock	14	5V	22	TMDS CLK shield
7	DDC Data	15	Ground	23	TMDS CLK-
8	(NC) CRT Vsync	16	Hot Plug Detected	24	TMDS CLK+



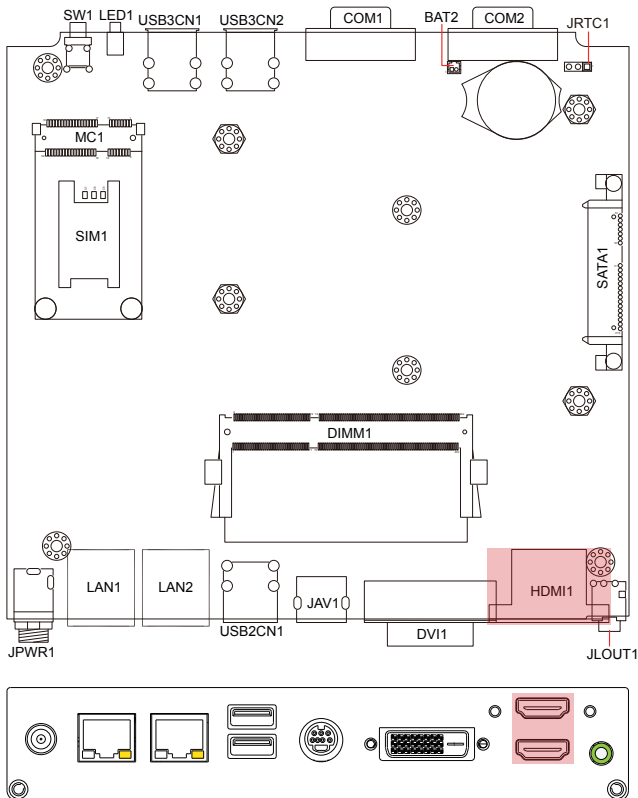
## HDMI1

Function: HDMI1/2

Connector Type: double stack HDMI connector



Pin	Description	Pin	Description	Pin	Description
1	TMDS DATA2+	8	TMDS DATA0 shield	15	DDC Clock
2	TMDS DATA2 shield	9	TMDS DATA0-	16	DDC Data
3	TMDS DATA2-	10	TMDS CLK+	17	DDC/CEC Ground
4	TMDS DATA1+	11	TMDS CLK shield	18	5V
5	TMDS DATA1 shield	12	TMDS CLK-	19	Hot Plug Detected
6	TMDS DATA1-	13	(NC) CEC		
7	TMDS DATA0+	14	NC		

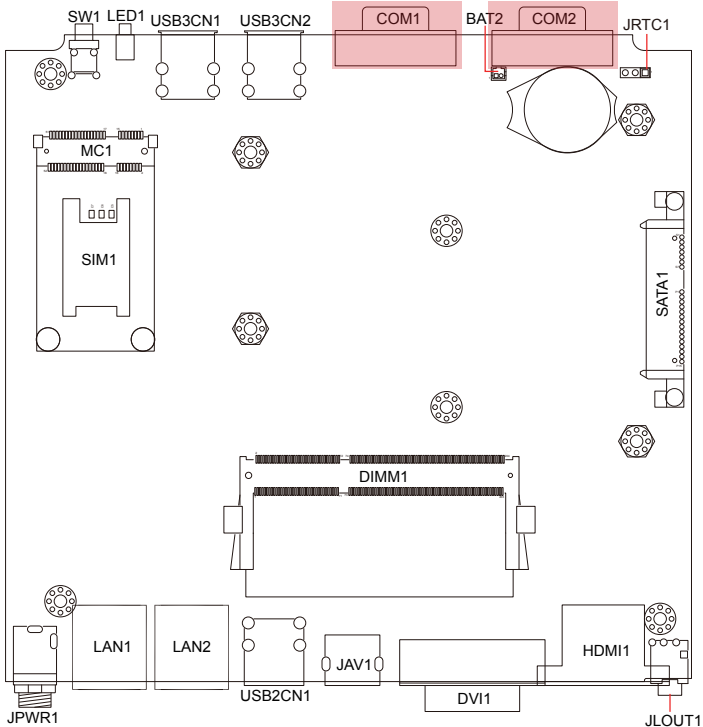
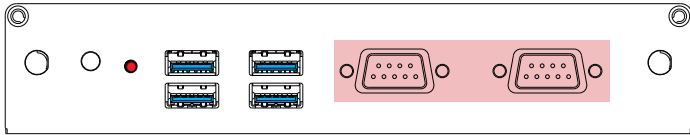
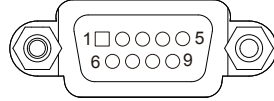


**COM1~2**

**Function:** Serial Port (COM1~2)

**Connector Type:** external 9-pin D-sub male connectors

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



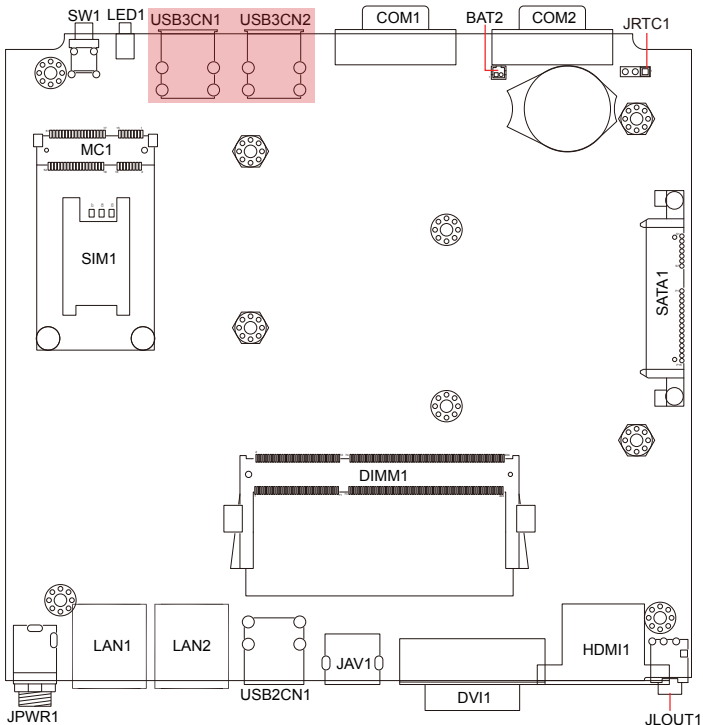
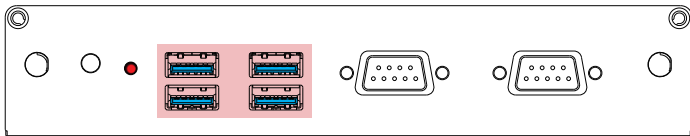
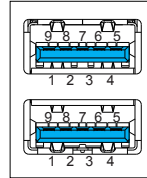


## USB3CN1 & USB3CN2

**Function:** USB3.0 Port 0/1/2/3 (Port 0/1 for USB3CN1; Port 2/3 for USB3CN2)

**Connector Type:** double stack USB3.0 type A connectors

Pin	Description	Pin	Description
1	5V	5	USB SSRX-
2	USB D-	6	USB SSRX+
3	USB D+	7	GND
4	GND	8	USB SSTX-
		9	USB SSTX+



**BAT2**

**Function:** battery connector

**Connector Type:** 1.25mm 2x1 pin wafer

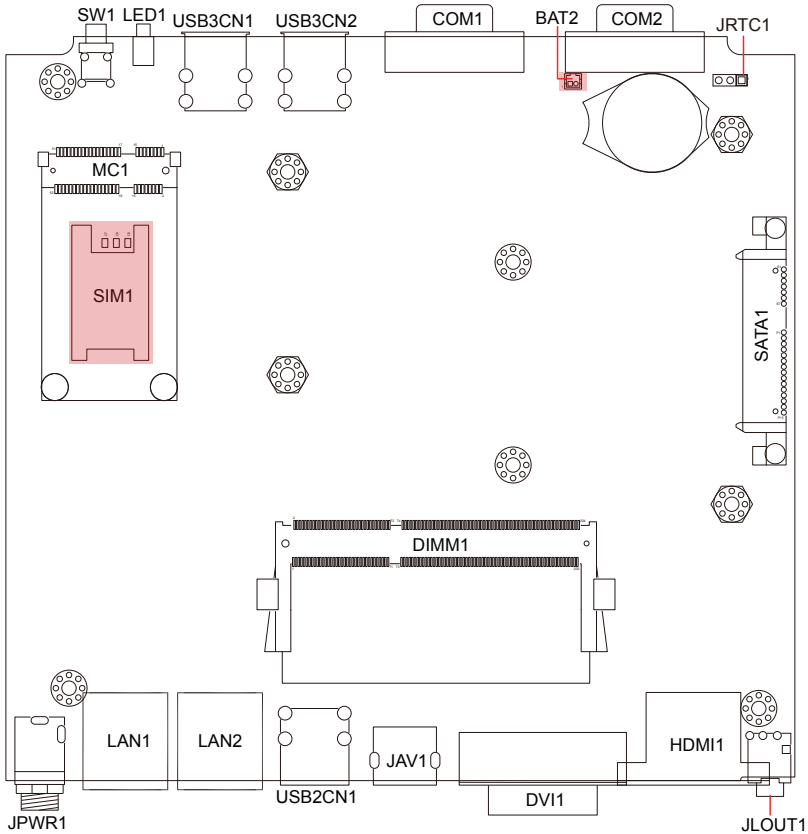
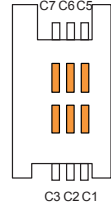
Pin	Description
1	GND
2	battery power



**SIM1**

**Function:** SIM card holder with a hinged cover

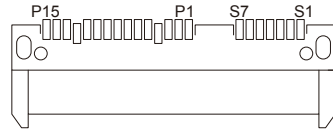
Pin	Description
C1	VCC
C2	RST
C3	CLK
C5	GND
C6	VPP
C7	I/O



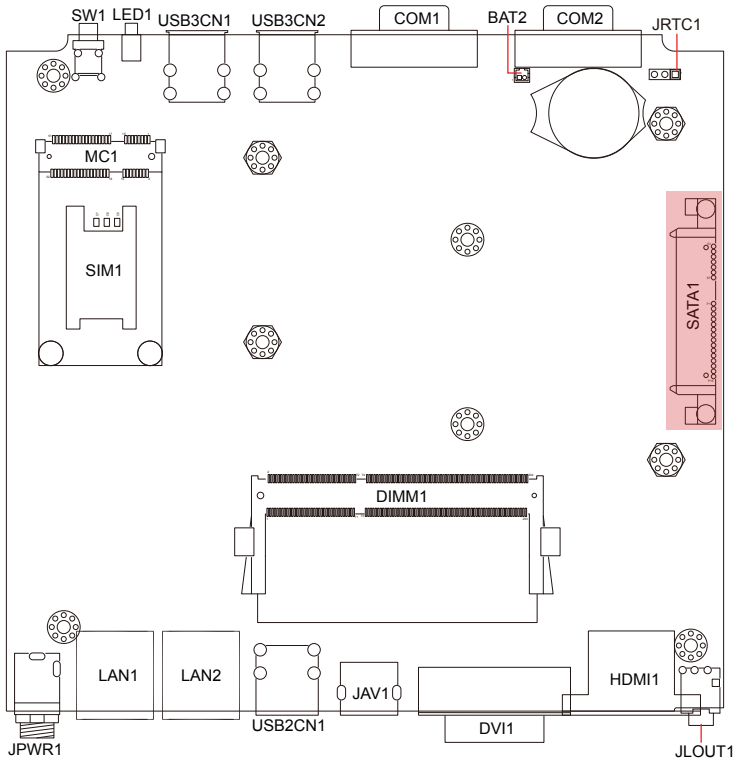
### SATA1

**Function:** S-ATA1 connector

**Connector Type:** SATA port with data + power vertical connector (7+15pin)



Pin	Description	Pin	Description	Pin	Description
S1	GND	P1	+3.3V	P8	+5V
S2	TX+	P2	+3.3V	P9	+5V
S3	TX-	P3	+3.3V	P10	GND
S4	GND	P4	GND	P11	NC
S5	RX-	P5	GND	P12	GND
S6	RX+	P6	GND	P13	NC
S7	GND	P7	+V5S	P14	NC
				P15	NC



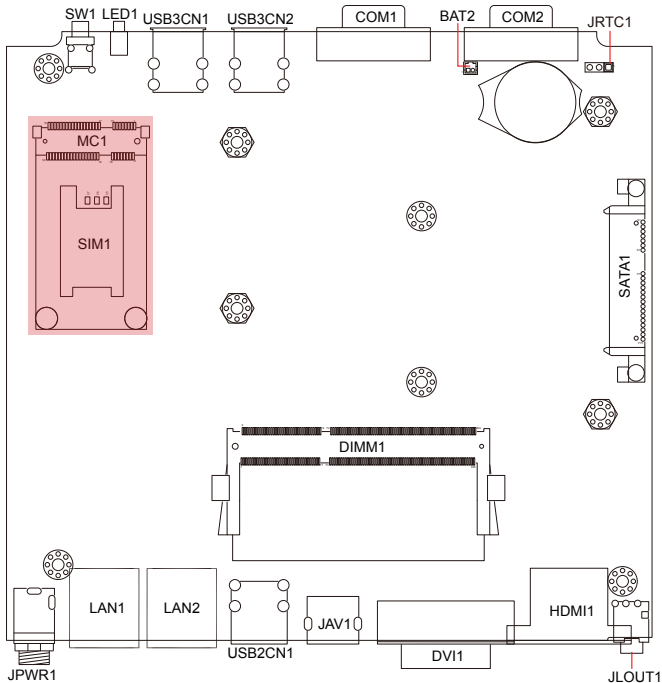
**MC1**

**Function:** PCI Express MiniCard socket

**Connector Type:** onboard 0.8mm pitch 52-pin edge card connector

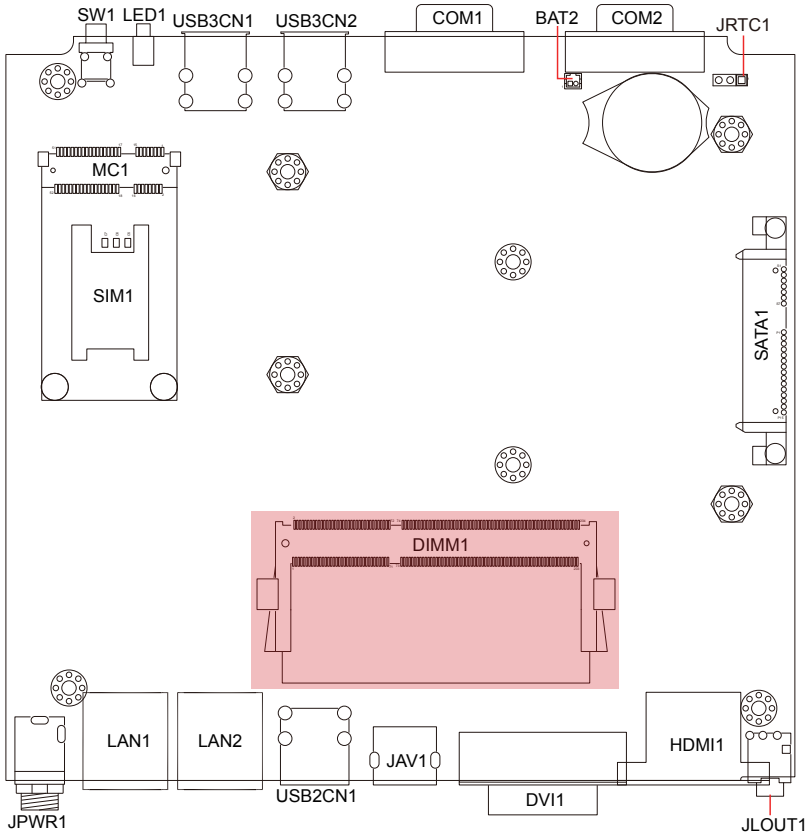


Pin	Desc.	Pin	Desc.	Pin	Desc.	Pin	Desc.
1	Wake	14	UIM_RESET	27	GND	40	GND
2	+3.3V	15	GND	28	+1.5V	41	+3.3V
3	COEX1	16	UIM_VPP	29	GND	42	LED_VWAN#
4	GND	17	UIM_C8/Reserved	30	SMB_CLK	43	GND
5	COEX2	18	GND	31	PETn0	44	LED_WLAN#
6	+1.5V	19	UIM_C4/Reserved	32	SMB_DATA	45	Reserved
7	CLKREQ#	20	W_Disable#	33	PETp0	46	LED_WPAN#
8	UIM_PWR	21	GND	34	GND	47	Reserved
9	GND	22	PERST#	35	GND	48	+1.5V
10	UIM_DATA	23	PERn0	36	USB_D-	49	Reserved
11	REFCLK-	24	+3.3V	37	GND	50	GND
12	UIM_CLK	25	PERp0	38	USB_D+	51	Reserved
13	REFCLK+	26	GND	39	+3.3V	52	+3.3V



## DIMM1

Function: 204-Pin DDR3 SO-DIMM socket



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# Chapter 4

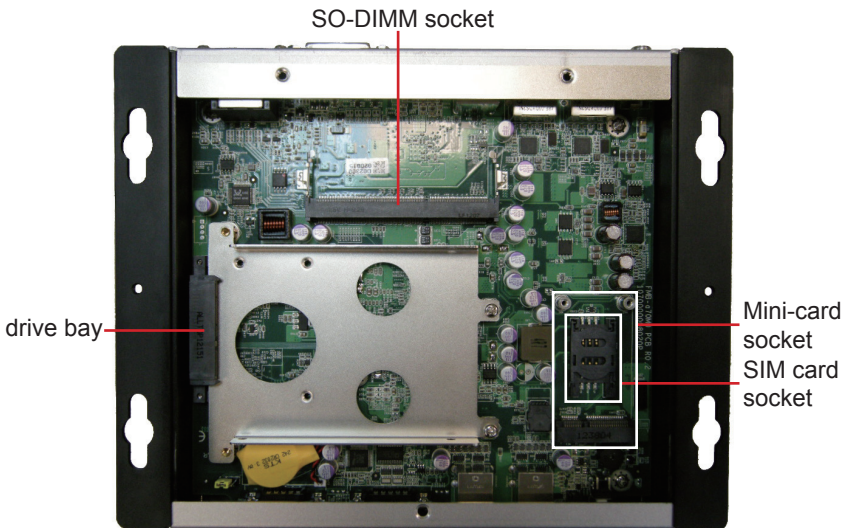
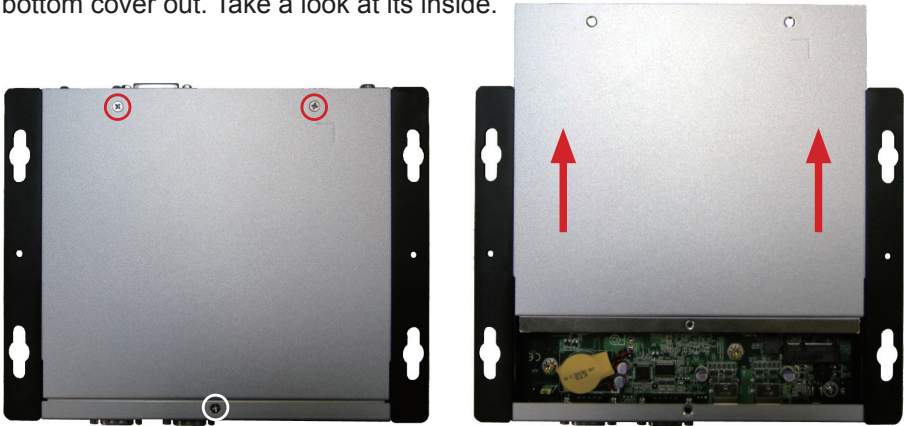
## Installation and Maintenance

## 4.1 Install Hardware

ELIT-1200 is constructed based on modular design to make it easy for users to add hardware or to maintain the computer. The following sections will guide you through simple hardware installations.

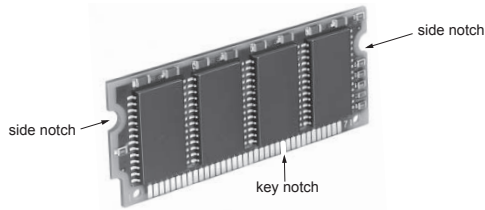
### 4.1.1 Remove Bottom Cover

Turn off and carefully place the computer upside down. Unscrew the screws securing the bottom cover with cross-head screwdriver. Retain them safely for later use, so do other components we are going to remove. And then, draw the bottom cover out. Take a look at its inside.





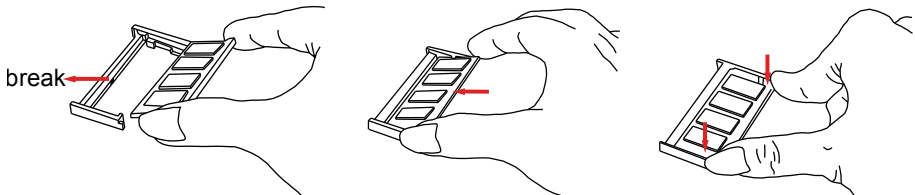
## 4.1.2 Install Memory Module



The main board has one dual inline memory module (DIMM) socket. Load the computer with a memory module of higher capacity to make programs run faster. The memory module for the computer's SO-DIMM socket should be a 204-pin DDR3 with a "key notch" off the centre among the pins. There are another two notches at left and right sides of the memory module to help fix the module in the socket.

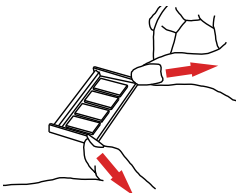
### To install the DDR3 memory module:

1. Find the SO-DIMM socket on the board. The SO-DIMM socket is horizontal type, and it has two spring-loaded locks to fix the memory module.
2. Confront the memory module's edge with the SO-DIMM connector. Align the memory module's key notch with the break on the SO-DIMM socket. Fully plug the memory module obliquely until it cannot be plugged any more.
3. Press down the memory module until it gets auto-locked in place.



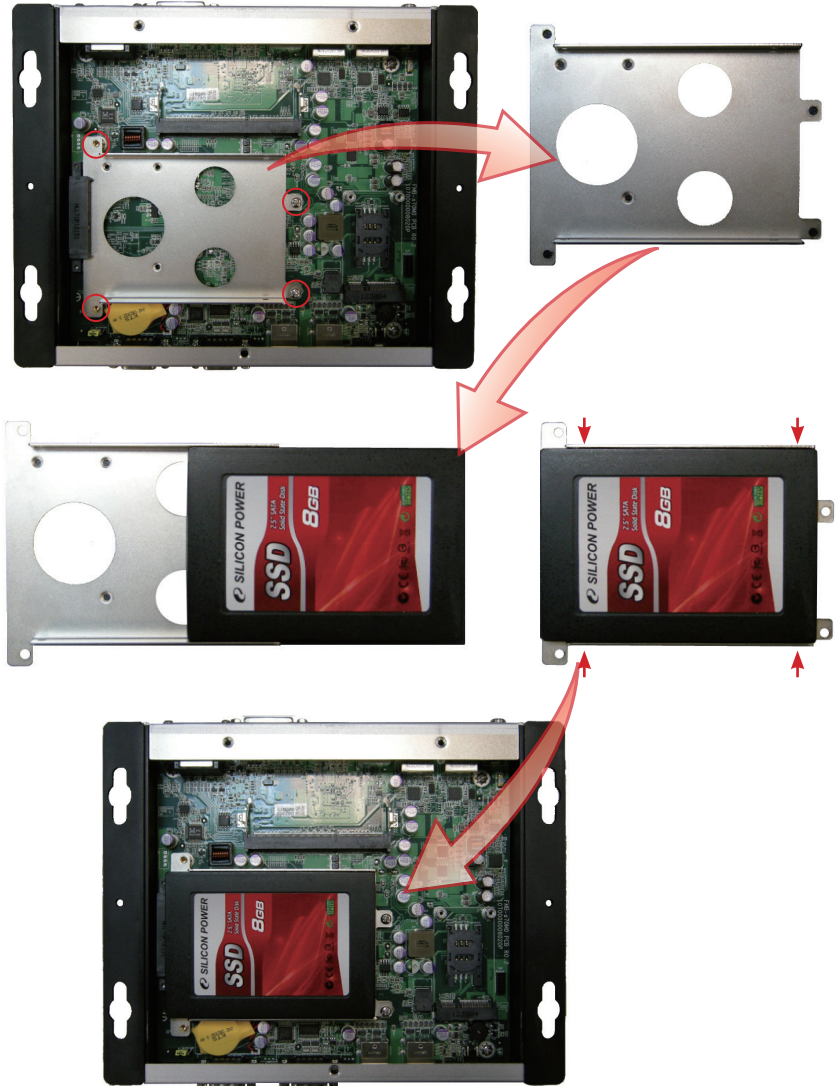
### To uninstall the DDR3 memory module:

Press spring-loaded locks at corners to right and left ways. Remove the memory module.



### 4.1.3 Install SSD

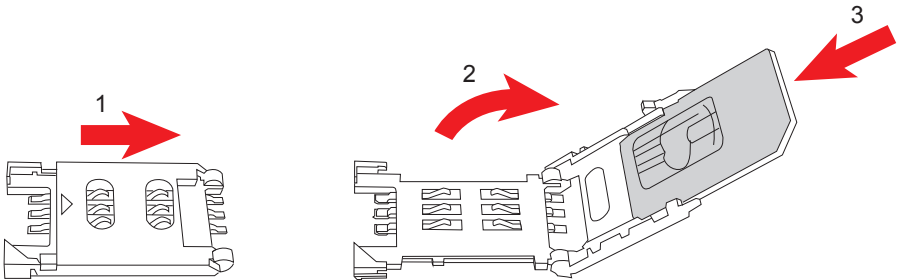
1. Find SSD bracket on main board. Unscrew its four corners where red circles locate. Draw out the bracket.
2. Mount SSD on bracket and lock it.
3. Fully insert the bracket into driver bay and secure its corners.



#### 4.1.4 Install SIM Card

The computer comes with a SIM socket for 3G networking. To install a SIM card:

1. Gently press SIM socket lid and move it rightwards. Lift socket lid.
2. Slip SIM card along grooves on lid's inside as below, close it and move leftwards.



Note: To make use of a SIM card for 3G networking, a 3G module is also needed on the computer, see [Appendix B: HSUPA or WiFi Module Hardware Installation on page 63](#) to install the 3G module **HSPA-SI1400**.

#### 4.1.5 Install WiFi or HSUPA Modules (optional)

The computer also comes with a Mini-card socket for WiFi (**WIFI-IN1300**) or HSUPA (**HSPA-SI1400**) module.



HSPA-SI1400  
HSUPA 3.75G module kit & internal wiring



WIFI-IN1300  
Intel® Centrino® Advanced-N 6205 WiFi module w/ 20cm internal wiring

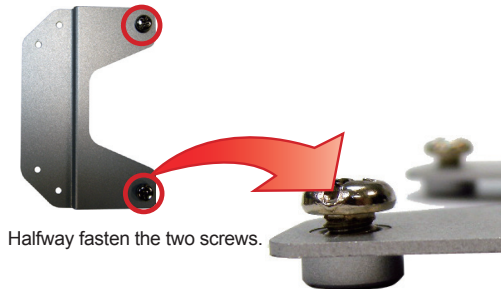
See [Appendix B: HSUPA or WiFi Module Hardware Installation on page 63](#) & [Appendix C: HSUPA or WiFi Module Software & Application Installation on page 67](#) to know how to install the hardware and software for both modules.

## 4.2 Mount the Computer

Integrate the computer to where it works by mounting it to a wall in the surroundings or to the rear of a display monitor. Mounting the computer to the rear of a display monitor relies on VMK-1000, a VESA mount kit, which is available on your option. Follow the guide below to integrate the computer to a display monitor using VMK-1000.

### 4.2.1 VESA-Mount (optional)

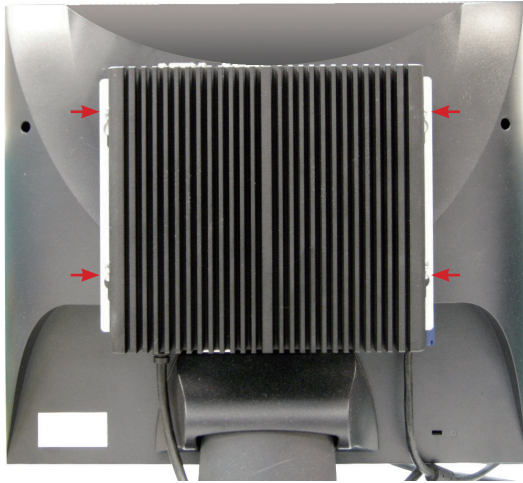
1. Prepare the VMK-1000 VESA mount kit, which includes two adapters. Halfway fasten two screws to each of the adapter as marked in the illustration below.



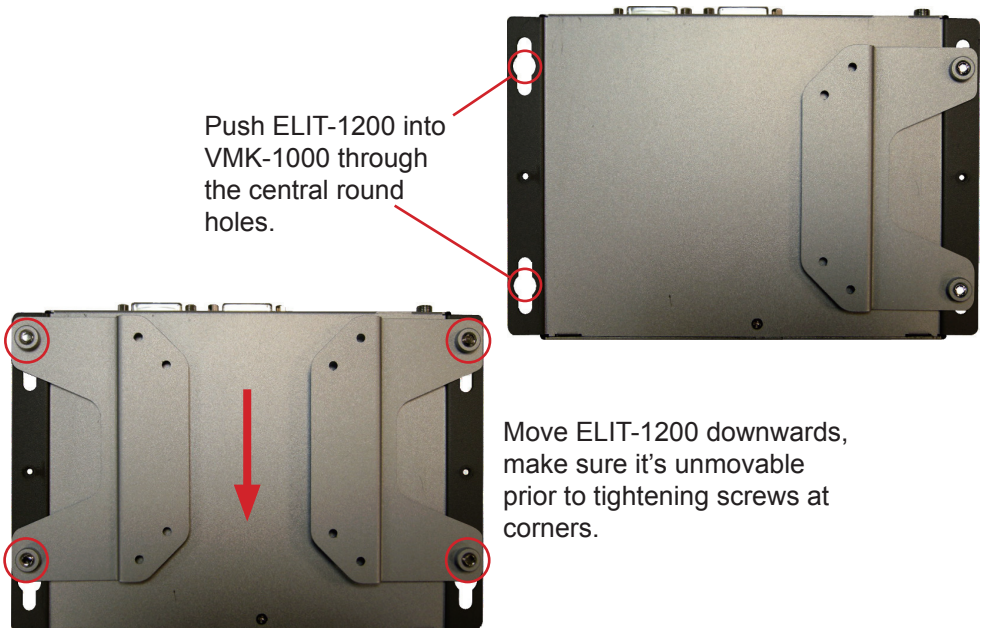
2. Mount VMK-1000 on place you want to fix (in this example, display monitor) through VESA-100 x 100 screw holes.



3. Hang the computer on VMK-1000 and tighten screws at corners to the end.



4. Viewing from the opposite side, it would be like this:



### 4.2.2 Wall-Mount

1. Find the four cutouts marked in the illustration below. Mount the computer to a wall by the said cutouts.



2. The computer may slide even though it's fixed on wall through four cutouts. At this time, fasten another two screws as red arrows direct to avoid the situation.



# Chapter 5

## BIOS

The BIOS Setup utility for the computer is featured by American Megatrends Inc to configure the system settings stored in the system’s BIOS ROM. The BIOS is activated once the computer powers on. When the computer is off, the battery on the main board supplies power to BIOS RAM.

To enter the BIOS Setup utility, keep hitting the “Delete” key upon powering on the computer.

This BIOS Setup utility is updated from time to time to improve system performance and hence the screenshots hereinafter may not fully comply with what you actually have onscreen.

### Key Commands

The BIOS Setup utility relies on a keyboard to receive user’s instructions. Hit the following keys to navigate within the utility and configure the utility.

Keystroke	Function
◀ ▶	Move to highlight a particular configuration screen from the top menu bar / Move to highlight items on the screen
▼ ▲	Move to highlight previous/next item
Enter	Select and access a setup item/field
Esc	On the Main Menu – Quit the setup and not save changes into CMOS (a message screen will display and ask you to select “OK” or “Cancel” for exiting and discarding changes. Use “←” and “→” to select and press “Enter” to confirm) On the Sub Menu – Exit current page and return to main menu
Page Up / +	Increase the numeric value on a selected setup item / make change
Page Down -	Decrease the numeric value on a selected setup item / make change
F1	Activate “General Help” screen
F10	Save the changes that have been made in the setup and exit. (a message screen will display and ask you to select “OK” or “Cancel” for exiting and saving changes. Use “←” and “→” to select and press “Enter” to confirm)



## 5.1 Main

The **Main** menu features the settings of **System Date** and **System Time** and displays some BIOS info and system info.

Aptio Setup Utility - Copyright (C) 2012 American Megatrends, Inc.

Main Advanced Chipset Boot Security Save & Exit

BIOS Information		Set the Date. Use Tab to switch between Date elements.
Project Version	ELIT-1200 1.00	
Build Date and Time	05/10/2013 09:11:07	
Memory Information		
Total Memory	2032 MB (DDR3)	
System Date	[Mon 05/27/2013]	
System Time	[09:18:21]	
Access Level	Administrator	→+: Select Screen ↓↑: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F9: Optimized Defaults F10: Save and Exit ESC: Exit

Version 2.15.1226. Copyright (C) 2012 American Megatrends, Inc.

Info	Description
Project Version	displays current project version information
Build Date and Time	the date that the BIOS version was made/updated
Total Memory	displays total memory information
System Date	Set the system date. Note that the 'Day' automatically changes when you set the date. ► The date format is: <b>Day:</b> Sun to Sat <b>Month:</b> 1 to 12 <b>Date:</b> 1 to 31 <b>Year:</b> 1998 to 2099

System Time	Set the system time. ▶ The time format is: <b>Hour:</b> 00 to 23 <b>Minute:</b> 00 to 59 <b>Second:</b> 00 to 59
-------------	---

## 5.2 Advanced

Access the **Advanced** menu to manage the computer’s system configuration including the Super IO chip.

```
Aptio Setup Utility - Copyright (C) 2012 American Megatrends, Inc.
Main Advanced Chipset Boot Security Save & Exit

  PCI-E Port Parameters
  Mini Card Control           [Enabled]
    ASPM Mode Control        [Disabled]
    Hotplug Mode Control     [Disabled]
▶ S5 RTC Wake Settings
▶ ACPI Settings
▶ CPU Configuration
▶ IDE Configuration
▶ USB Configuration
▶ F81801 Super IO Configuration
▶ F81801 H/W Monitor

Mini Card Enabled/Disabled

+↔: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F9: Optimized Defaults
F10: Save and Exit
ESC: Exit

Version 2.15.1226. Copyright (C) 2012 American Megatrends, Inc.
```

Setting	Description
Mini Card Control	<b>Enable</b> (default) / <b>Disable</b> Mini Card
ASPM Mode Control	NB root port ASPM mode control ▶ Options: <b>Disabled</b> (default), <b>L0s Entry, L1 Entry, L0s and L1 Entry</b>
Hotplug Mode Control	NB root port hotplug mode control ▶ Options: <b>Disabled</b> (default), <b>Hotplug Basic, Hotplug Server, Hotplug Enhanced, Hotplug In-board</b>
S5 RTC Wake Settings	See <a href="#">5.2.1 S5 RTC Wake Settings on page 46</a>
ACPI Settings	See <a href="#">5.2.2 ACPI Settings on page 47</a>
CPU Configuration	See <a href="#">5.2.3 CPU Configuration on page 48</a>
IDE Configuration	See <a href="#">5.2.4 IDE Configuration on page 49</a>
USB Configuration	See <a href="#">5.2.5 USB Configuration on page 50</a>
F81801 Super IO Configuration	See <a href="#">5.2.6 F81801 Super IO Configuration on page 52</a>
F81801 H/W Monitor	See <a href="#">5.2.7 F81801 H/W Monitor on page 54</a>

### 5.2.1 S5 RTC Wake Settings

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Advanced

Wake system with Fixed Time      [Disabled]	Enable or disable System wake on alarm event. When enabled, System will wake on the hr::min::sec specified
→+: Select Screen ↓↑: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F9: Optimized Defaults F10: Save and Exit ESC: Exit	

Version 2.15.1226. Copyright (C) 2012 American Megatrends, Inc.

Setting	Description
Wake system with Fixed Time	<b>Enable or Disable</b> (default) System wake on alarm event. When enabled, System will wake on the hr::min::sec specified.

## 5.2.2 ACPI Settings

Aptio Setup Utility - Copyright (C) 2012 American Megatrends, Inc.

Advanced

<p>ACPI Settings</p> <p>Enable Hibernation [Enabled]</p> <p>Lock Legacy Resources [Disabled]</p>	<p>Enables or Disables System ability to Hibernate (OS/S4 Sleep State). This option may be not effective with some OS.</p> <hr/> <p>→←: Select Screen          ↓↑: Select Item          Enter: Select          +/-: Change Opt.          F1: General Help          F2: Previous Values          F9: Optimized Defaults          F10: Save and Exit          ESC: Exit</p>
--	---

Version 2.15.1226. Copyright (C) 2012 American Megatrends, Inc.

Setting	Description
Enable Hibernation	<b>Enable</b> (default) or <b>Disable</b> system ability to Hibernate (OS/S4 Sleep State). This option may be not effective with some OS.
Lock Legacy Resources	<b>Enable</b> or <b>Disable</b> (default) Legacy Resources

### 5.2.3 CPU Configuration

Aptio Setup Utility - Copyright (C) 2012 American Megatrends, Inc.  
Advanced

<p>CPU Configuration</p> <p>Module Version: 4.6.5.1 TrinityPI 021 AGESA Version: 1.0.0.9</p> <p>Node 0 Information Socket0: AMD R-260H APU with Radeon(tm) HD Graphics Dual Core Running @ 2129 MHz 975 mV Max Speed:2100 MHz Intended Speed:2100 MHz Min Speed:900 MHz Microcode Patch Level: 6001119</p> <p>-----Cache per Core----- L1 Instruction Cache: 32 KB/2-way L1 Data Cache: 16 KB/4-way L2 Cache: 1024 KB/16-way No L3 Cache Present</p>	<p>→+: Select Screen ↓↑: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F9: Optimized Defaults F10: Save and Exit ESC: Exit</p>
--	--

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## 5.2.4 IDE Configuration

Aptio Setup Utility - Copyright (C) 2012 American Megatrends, Inc.  
Advanced

IDE Configuration	
SATA Port0	Not Present

→+: Select Screen  
↓↑: Select Item  
Enter: Select  
+/-: Change Opt.  
F1: General Help  
F2: Previous Values  
F9: Optimized Defaults  
F10: Save and Exit  
ESC: Exit

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USB Mass Storage Driver Support	<b>Enable</b> (default) / <b>Disable</b> USB Mass Storage Driver Support.
Port 60/64 Emulation	Enables I/O port 60h/64h emulation support. This should be enabled for the complete USB keyboard legacy support for non-USB aware OSes. ▶ Options: <b>Enabled</b> (default) and <b>Disabled</b> .
USB hardware delays and time-outs:	
USB transfer time-out	The time-out value for Control, Bulk and Interrupt transfers. ▶ Options: <b>1/5/10/20 sec</b> (default)
Device reset time-out	USB mass storage device Start Unit command time-out. ▶ Options: <b>10/20</b> (default)/ <b>30/40 sec</b>
Device power-up delay	Maximum time the device will take before it properly reports itself to the Host Controller. 'Auto' uses default value: for a Root port it is 100 ms, for a Hub port the delay is taken from Hub descriptor. ▶ Options: <b>Auto</b> (default), <b>Manual</b>

## 5.2.6 F81801 Super IO Configuration

Aptio Setup Utility - Copyright (C) 2012 American Megatrends, Inc.

Advanced

<p>F81801 Super IO Configuration</p> <p>F81801 Super IO Chip <span style="float: right;">F81801</span></p> <ul style="list-style-type: none"> <li>▶ Serial Port 0 Configuration</li> <li>▶ Serial Port 1 Configuration</li> </ul>	<p>Set Parameters of Serial Port 0 (COMA)</p> <hr/> <p>→+: Select Screen          ↓↑: Select Item          Enter: Select          +/-: Change Opt.          F1: General Help          F2: Previous Values          F9: Optimized Defaults          F10: Save and Exit          ESC: Exit</p>
---	--

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Setting	Description
Serial Port 0/1 Configuration	See next page.

## Serial Port 0/1 Configuration

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Advanced

Serial Port 0 Configuration  Serial Port                    [Enabled] Device Settings                IO=3F8h; IRQ=4;  Change Settings                [IO=3F8h; IRQ=4;]	Enable or Disable Serial Port (COM)       →+: Select Screen ↓↑: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F9: Optimized Defaults F10: Save and Exit ESC: Exit
---	---

Version 2.15.1226. Copyright (C) 2012 American Megatrends, Inc.

Setting	Description
Serial Port	<b>Enable</b> (default) or <b>Disable</b> Serial Port (COM)
Change Settings	Select an optimal setting for Super IO device. ► Options: <b>IO=3F8h; IRQ=4;</b> (default for Serial Port 0) <b>IO=2F8h; IRQ=3;</b> (default for Serial Port 1) <b>IO=3F8h; IRQ=3, 4, 5, 6, 7, 10, 11, 12;</b> <b>IO=2F8h; IRQ=3, 4, 5, 6, 7, 10, 11, 12;</b> <b>IO=3E8h; IRQ=3, 4, 5, 6, 7, 10, 11, 12;</b> <b>IO=2E8h; IRQ=3, 4, 5, 6, 7, 10, 11, 12;</b>

### 5.2.7 F81801 H/W Monitor

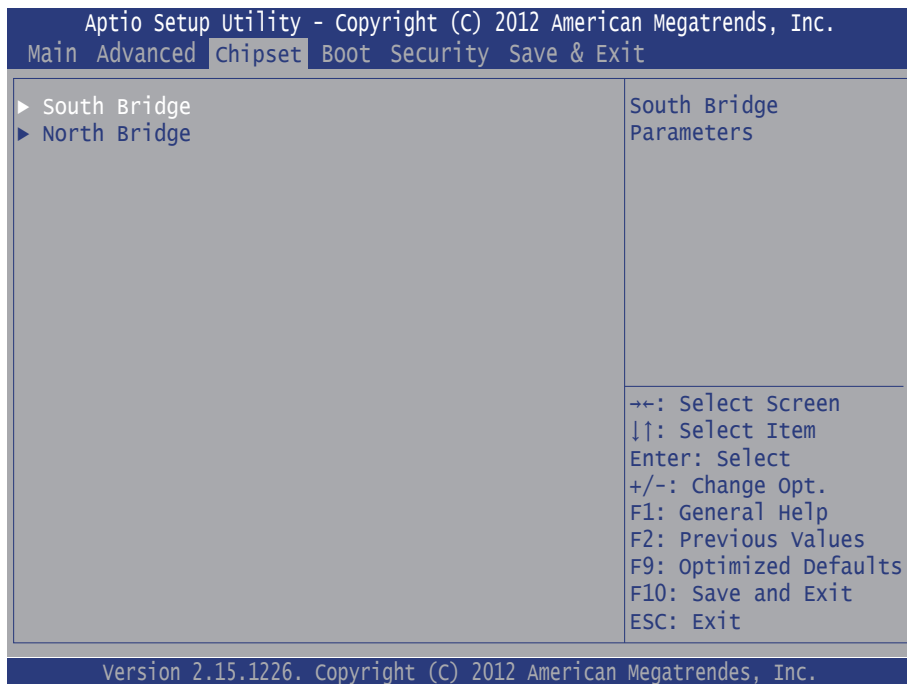
Aptio Setup Utility - Copyright (C) 2012 American Megatrends, Inc.  
Advanced

Pc Health Status	
CPU temperature1	: +38°c
System temperature2	: +36°c
3.3V	: +3.312 V
VCORE	: +1.120 V
VDIMM	: +1.520 V
VSB3	: +3.328 V
VBAT	: +3.280 V

→+: Select Screen  
↓↑: Select Item  
Enter: Select  
+/-: Change Opt.  
F1: General Help  
F2: Previous Values  
F9: Optimized Defaults  
F10: Save and Exit  
ESC: Exit

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## 5.3 Chipset



Setting	Description
South Bridge	See <a href="#">5.3.1 South Bridge on page 56</a>
North Bridge	See <a href="#">5.3.2 North Bridge on page 57</a>

### 5.3.1 South Bridge

Aptio Setup Utility - Copyright (C) 2012 American Megatrends, Inc.

Chipset

---

AMD Reference code Version: Trinity PI 1.0.0.9

OnChip SATA Type [AHCI]  
 Restore on AC Power LOSS [Power On]

---

→+: Select Screen  
 ↓↑: Select Item  
 Enter: Select  
 +/-: Change Opt.  
 F1: General Help  
 F2: Previous Values  
 F9: Optimized Defaults  
 F10: Save and Exit  
 ESC: Exit

---

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Setting	Description
OnChip SATA Type	Native IDE /n RAID /n AHCI /n AHCI /n Legacy IDE /n IDE->AHCI /n HyperFlash ► Options: <b>Native IDE</b> and <b>AHCI</b> (default).
Restore on AC Power LOSS	► Options: <b>Power On</b> (default), <b>Power Off</b>

### 5.3.2 North Bridge

Aptio Setup Utility - Copyright (C) 2012 American Megatrends, Inc.

Chipset

North Bridge Configuration	
Memory Information	
Total Memory: 2032 MB (DDR3)	
Socket 0 Information	
Starting Address: 0 KB	
Ending Address: 2097151 KB	
Dimm0: size=2048 MB, speed=667 MHz	
Dimm1: Not Present	
	→+: Select Screen ↓↑: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F9: Optimized Defaults F10: Save and Exit ESC: Exit

Version 2.15.1226. Copyright (C) 2012 American Megatrends, Inc.

### 5.4 Boot

Aptio Setup Utility - Copyright (C) 2012 American Megatrends, Inc.

Main Advanced Chipset **Boot** Security Save & Exit

<p>Boot Configuration</p> <p>Setup Prompt Timeout      <b>1</b></p> <p>Bootup NumLock State      [On]</p> <p>Boot option filter          [UEFI and Legacy]</p> <p>Launch PXE OpROM policy   [Do not launch]</p> <p> </p> <p>Boot Option Priorities</p>	<p>Number of seconds to wait for setup activation key. 65535(0xFFFF) means indefinite waiting.</p>
<p>→+: Select Screen                  ↓↑: Select Item                  Enter: Select                  +/-: Change Opt.                  F1: General Help                  F2: Previous Values                  F9: Optimized Defaults                  F10: Save and Exit                  ESC: Exit</p>	

Version 2.15.1226. Copyright (C) 2012 American Megatrends, Inc.

Setting	Description
Setup Prompt Timeout	Number of seconds to wait for setup activation key. 65535(0xFFFF) means indefinite waiting.
Bootup NumLock State	Select the keyboard NumLock state. ▶ Options: <b>On</b> (default) and <b>Off</b> .
Boot option filter	This option controls what devices system can boot to ▶ Options: <b>UEFI and Legacy</b> (default), <b>Legacy only</b> and <b>UEFI only</b> .
Launch PXE OpROM policy	Controls the execution of UEFI and Legacy PXE OpROM ▶ Options: <b>Do not launch</b> (default), <b>Legacy only</b>





## 5.6 Save & Exit

Aptio Setup Utility - Copyright (C) 2012 American Megatrends, Inc.

Main Advanced Chipset Boot Security **Save & Exit**

<p>Save Changes and Reset Restore Defaults</p> <p>Boot Override</p>	<p>Reset the system after saving the changes.</p>
<pre> ++: Select Screen  ↑: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F9: Optimized Defaults F10: Save and Exit ESC: Exit                     </pre>	

Version 2.15.1226. Copyright (C) 2012 American Megatrends, Inc.

Setting	Description
Save Changes and Reset	Saves the changes and resets the system. ▶ Enter the item and then a dialog box pops up: <b>Save configuration and reset?</b>
Restore Defaults	Restore/Load Default values for all the setup options. ▶ Enter the item and then a dialog box pops up: <b>Load Optimized Defaults?</b>
Boot Override	<b>Boot Override</b> presents a list of boot devices on screen. Select the device to boot up the system regardless of the currently configured boot priority.



# Appendix

## Appendix A: Watchdog Timer (WDT) Setting

WDT is widely applied to industry computers to monitor activities of CPU. The programmed application triggers WDT with adequate timer setting depending on its requirement. Before WDT counts down to zero, the functional system will reset the counter. In case the WDT counter is not reset by an abnormal system, it will counts down to zero and then reset the system automatically.

This computer supports the watchdog timer up to 255 levels for users for software programming. Below please take the source code written in C for a WDT application example.

```
/*----- Include Header Area -----*/
#include "math.h"
#include "stdio.h"
#include "dos.h"

#define SIO_INDEX      0x4E          /* or index = 0x2E */
#define SIO_DATA      0x4F          /* or data = 0x2F */

/*----- routing, sub-routing -----*/
void main()
{
    outportb(SIO_INDEX, 0x87);      /* SIO - Enable */
    outportb(SIO_INDEX, 0x87);

    outportb(SIO_INDEX, 0x07);      /* LDN - WDT */
    outportb(SIO_DATA, 0x07);

    outportb(SIO_INDEX, 0x2B);      /* GPIO12/WDRST# function select */
    outportb(SIO_DATA, 0x00);      /* The pin function is WDRST# */

    outportb(SIO_INDEX, 0x30);      /* WDT - Enable */
    outportb(SIO_DATA, 0x01);

    outportb(SIO_INDEX, 0xF0);      /* WDOUT - Enable */
    outportb(SIO_DATA, 0x80);

    outportb(SIO_INDEX, 0xF6);      /* WDT - Timeout Value : 5sec */
    outportb(SIO_DATA, 0x05);

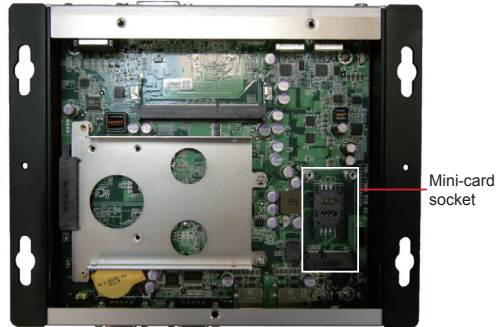
    outportb(SIO_INDEX, 0xF5);      /* WDT - Configuration */
    outportb(SIO_DATA, 0x31);

    outportb(SIO_INDEX, 0xAA);      /* SIO - Disable */
}
```

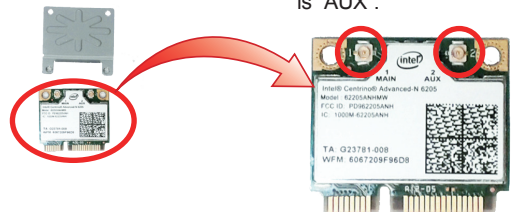
## Appendix B: HSUPA or WiFi Module Hardware Installation

To be able to network with 3G, hardware-wise the computer needs the HSUPA module **HSPA-SI1400** installed and a SIM card inserted (as described in [4.1.4 Install SIM Card on page 37](#)). To use WiFi connection, the WiFi module **HIFI-IN1300** should be installed instead. This section will guide you through hardware installation, and see next section for software and application installation.

1. Remove the computer's bottom cover as described in [4.1.1 Remove Bottom Cover on page 34](#). Find the Mini-card socket for wireless or 3G module on the board.



2. Execute this extra step for WiFi module. Prepare the **WIFI-IN1300** WiFi module kit. The module is a half-size module of **PCI Express Mini-card** form factor, with two U.FL connectors, one is "MAIN", and the other is "AUX".



Two U.FL connectors, one is "MAIN", the other is "AUX".

In order to make the half-size WiFi module compatible with the **Mini-card** socket, extend the WiFi module with a "mini half bracket". Join them together by using two screws.



Position the WiFi module and the "mini half bracket" exactly as shown.

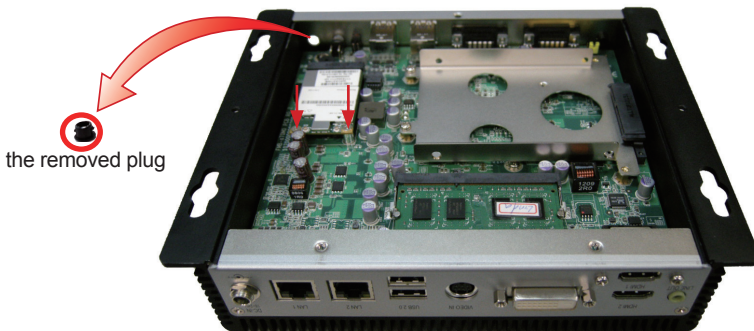


Join the WiFi module and the "mini half bracket" by two screws.

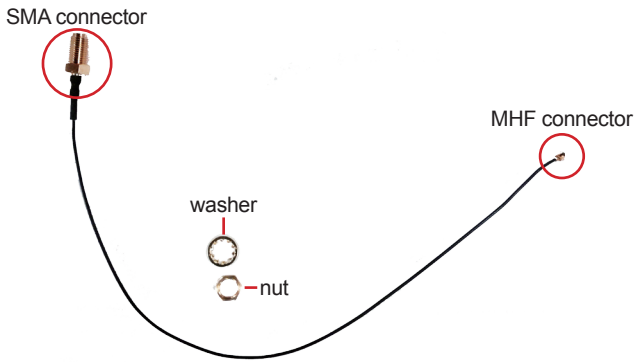
3. Plug WiFi or HSUPA card to the socket's connector by a slanted angle. Fully plug the module. Note the notch on the wireless module should meet the break of the connector.



4. Press down the module and fix the module in place using two screws. Remove the plastic plug from the computer's panel to create an antenna hole. Keep the plastic plug for any possible restoration in the future.



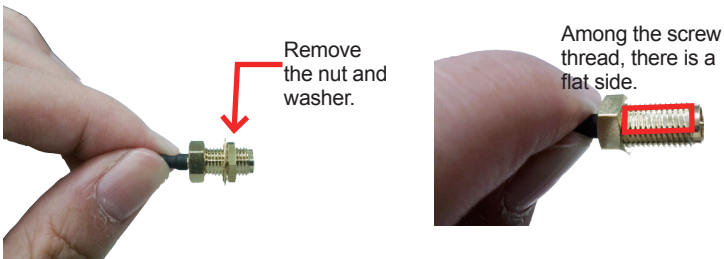
5. Prepare RF cable, washer, nut included in WiFi or HSUPA module. The cable has an SMA connector on one end and an MHF connector on the other.



6. Connect RF cable's MHF connector to the WiFi module's "MAIN" connector.



7. Remove the washer and the nut from the other end of the RF cable, which is an SMA connector. Save the washer and nut for later use. Note the SMA connector has the form of a threaded bolt, with one flat side.



8. Push the SMA connector through the above mentioned antenna hole. Note to meet the aforesaid flat side with the antenna hole's flat side.



9. Mount the washer first and then the nut to the SMA connector. Make sure the nut is tightened.



10. Have an external antenna. Screw and tightly fasten the antenna to the SMA connector. Swivel the antenna to an angle of best signals.





## Appendix C: HSUPA or WiFi Module Software & Application Installation

This section will guide you to install HSUPA & WiFi modules' drivers and application programs. To have a copy of the device driver, contact ARBOR customer service by the contact info described in [Technical Support on page vi](#).

### C.1 HSUPA Module

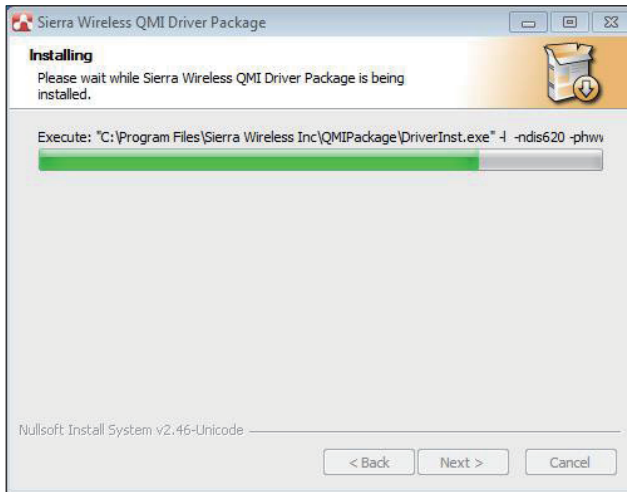
To install the driver for the 3G module **HSPA-SI1400**:

1. Run the executable file **SWIQMISetup.exe**.

The installer then opens. Click the **Next** button to proceed.



2. The driver installation then starts, progresses and finishes.



3. Click the **Finish** button to quit the driver installation.



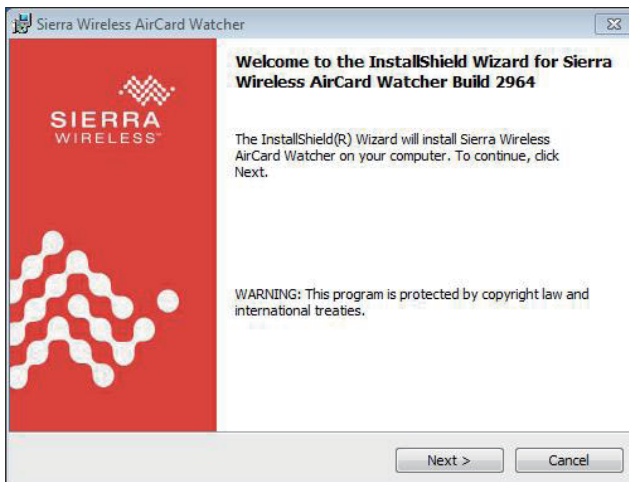
Except device driver, you also need application program to use 3G function. You may install your own application, or request an application program from ARBOR customer service.

1. Run the Windows Installer file **Watcher\_Generic.msi**.

The installer opens and prepares to install.



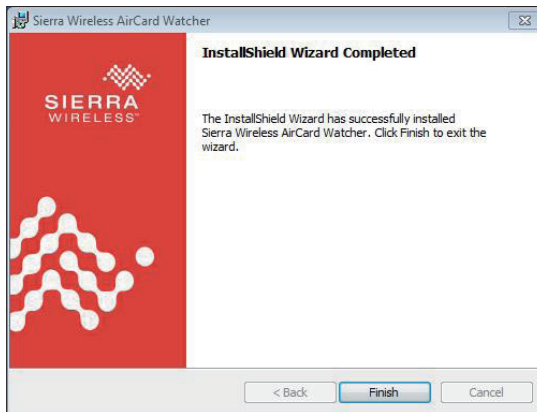
2. Once the preparation finishes, the installer prompts to install **Sierra Wireless AirCard Watcher** on the computer. Click the **Next** button to proceed.




3. The installer then prompts the license agreement. Select **I accept the terms in the license agreement**. Click the **Change...** button to browse for an alternate folder to install the application program to, or simply click the **Next** button to install the application program to the suggested folder.



4. The installation then starts, progresses and finishes. Click the **Finish** button to quit the installation.



5. An **AirCard Watcher** icon  then shows up on the desktop.

6. Double-click the **AirCard Watcher** icon  to launch the application program.

The **AirCard Watcher** opens.

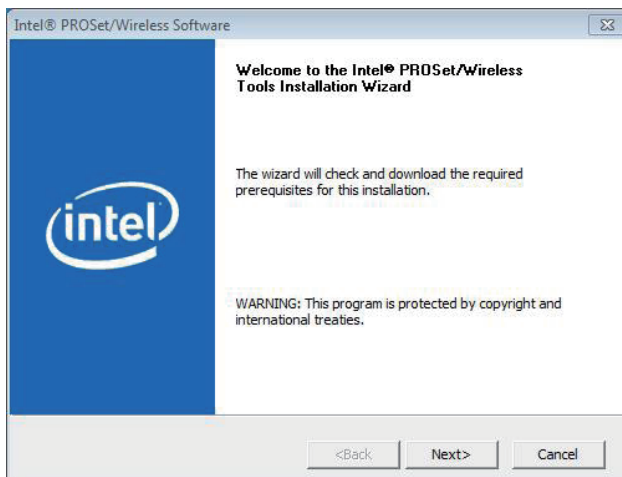


7. See the document of the **AirCard Watcher** by clicking question mark to know how to use the application program.

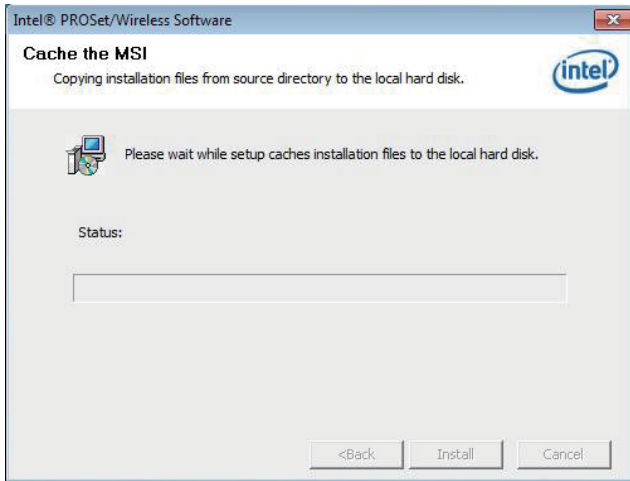
## C.2 WiFi Module

1. Request a copy of the device driver from ARBOR customer service. Run the executable file of the device driver, for example **Advanced-N 6205 WinXP\_14.2.0.10\_x32.exe**.

The installer then opens. Click the **Next** button to proceed.



2. The installer then starts to prepare for the setup.



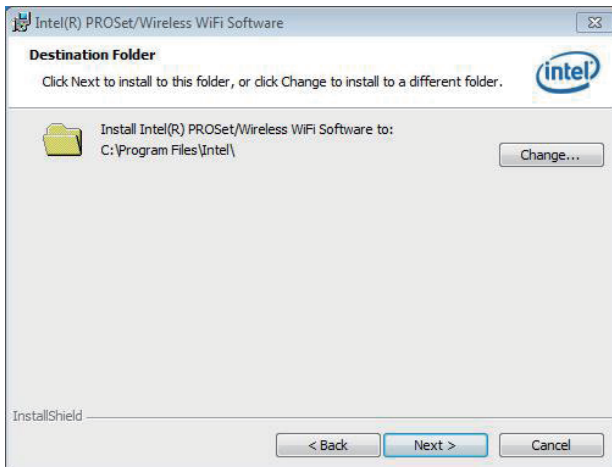
3. When the preparation finishes, the installer prompts to install **Intel(R) PROSet/Wireless WiFi Software** on the computer. Click the **Next** button to proceed.



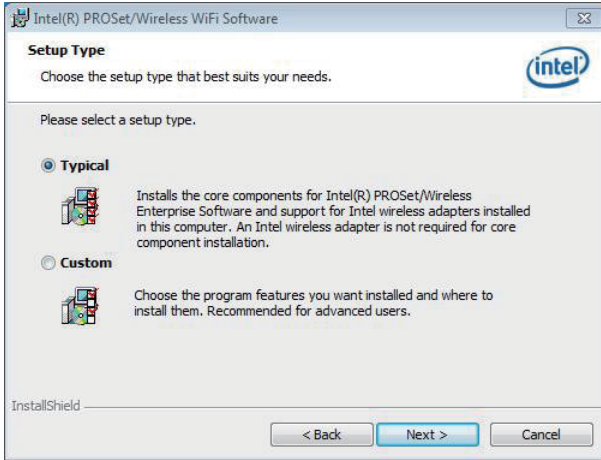
- The installer then prompts the license agreement. Select **I accept the terms in the license agreement** and click the **Next** button to proceed.



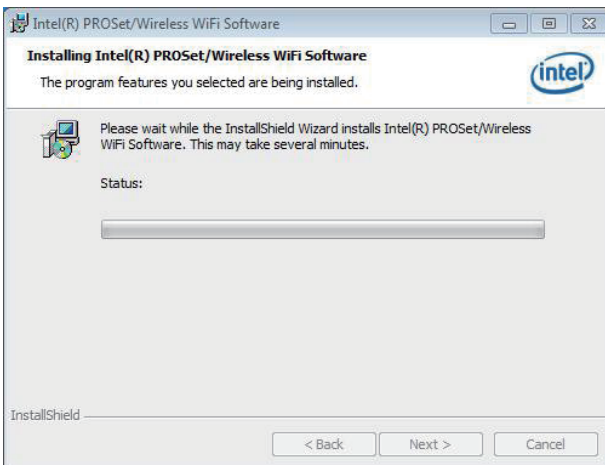
- The installer then asks where to install the software. Click the **Change...** button to browse for an alternate folder to install the software to, or simply click the **Next** button to install the software to the suggested folder.



6. The installer then opens a **Setup Type** selection. Select **Typical** to install both the driver and the application program (recommended) or select **Custom** to choose the features to install. Then click the **Next** button to proceed.

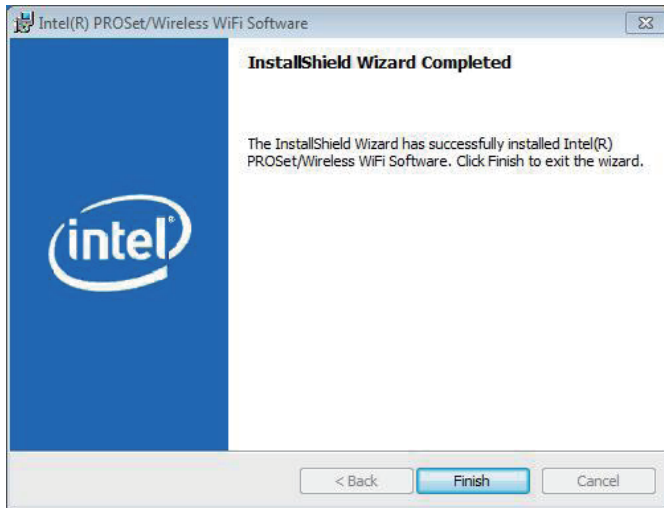


7. The software installation then starts, progresses and finishes.





8. Click the **Finish** button to quit the software installation.



9. The computer's WiFi feature is ready-to-use, see the document of the application program to know how to connect the computer to a WiFi hotspot.