ALAD-A1001T

User's Manual

Version Note

No.	Ver.	Note	Date	Writer
1	A1.0	First edition	20170916	Colin Cheng
2	A1.1	Second version	20180910	Tracy Liu
2	A1.2	COM1/2 485 signal correction	20200824	Echo Guo

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Product Warranty (2 years)

JHC warrants to you, the original purchaser, that each of its products will be free from defects in materials and workmanship for two years from the date of purchase.

This warranty does not apply to any products which have been repaired or altered by persons other than repair personnel authorized by JHC, or which have been subject to misuse, abuse, accident or improper installation.

JHC assumes no liability under the terms of this warranty as a consequence of such events.

Because of JHC.s high quality-control standards and rigorous testing, most of our customers never need to use our repair service. If an JHC product is defective, it will be repaired or replaced at no charge during the warranty period. For out-of-warranty repairs, you will be billed according to the cost of replacement materials, service time and freight. Please consult your dealer for more details.

If you think you have a defective product, follow these steps:

1. Collect all the information about the problem encountered. (For example, CPU speed, JHC products used, other hardware and software used, etc.) Note anything abnormal and list any onscreen messages you get when the problem occurs.
2. Call your dealer and describe the problem. Please have your manual, product, and any helpful information readily available.
3. If your product is diagnosed as defective, obtain an RMA (return merchandise authorization) number from your dealer. This allows us to process your return more quickly.
4. Carefully pack the defective product, a fully-completed Repair and Replacement Order Card and a photocopy proof of purchase date (such as your sales receipt) in a shippable container. A product returned without proof of the purchase date is not eligible for warranty service.
5. Write the RMA number visibly on the outside of the package and ship it prepaid to your dealer.

Declaration of Conformity

CE

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 JHC. Please contact your local supplier for ordering information. Test conditions for passing included the equipment being operated within an industrial enclosure. In order to protect the product from being damaged by ESD (Electrostatic Discharge) and EMI leakage, we strongly recommend the use of CE-compliant industrial enclosure products.

FCC Class A

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.

Technical Support and Assistance

Step 1. Visit the JHC web site at www.jhctech.com.cn where you can find the latest information about the product.

Step 2. Contact your distributor, sales representative, or JHC's customer service center for technical support if you need additional assistance. Please have the following information ready before you call:

- Product name and serial number
- Description of your peripheral attachments
- Description of your software (operating system, version, application software, etc.)
- A complete description of the problem
- The exact wording of any error messages

Contents

CHAPTER 1

General Information

1.1 Introduction

ALAD-A1001T is an intelligent, fanless embedded panel PC, the system powered by Intel® Baytail-D Celeron J1900 family.

ALAD-A1001T offers multiple I/O interfaces, there are 1*HDMI interface, 2*Giga Lan ports, 1*USB3.0 port, 3*USB2.0 ports, 2*COM, 1*Mini PCIe socket with PCIex1 and USB signals.

ALAD-A1001T supports 10.1 inches 1280*800@60Hz TFT LCD, with 5-wire resistive or projected capacitive touch, 1*2.5 inches SATA HDD driver bay, 1*mSATA for storage, DC 9~24V power input.

1.2 Features

1、Aluminum die-casting chassis, fanless design;

2、10.1" LED TFT LCD, capacitive/ resistive touch;

3、Intel® Baytail-D Celeron J1900 CPU;

4、1*DDR3L 1333 SODIMM, Up to 8GB;

5、1*Mini PCIe(PCIeX1+USB);

6、2*COM, 2*LAN, 1*USB3.0, 3*USB2.0, 2*2W Speaker;

7、1*2.5" HDD Bay, 1*mSATA, dual storage;

8、DC 9~24V power input;

9、Easy-pluggable SATA bay.

1.3 Specifications

1.3.1 General

CPU: Intel® Baytail-D family(Celeron J1900 2.0-2.24GHz，4C4T，TDP 10W)

BIOS: SPI 8MB flash ROM

System Memory: 1*DDR3L 1333MHz SODIMM, Max 8GB

Watchdog Timer: 255-level interval timer, setup by software

Serial Ports: 1* RS232/422/485, 1*RS232, D-sub 9 male in rear

USB: 1* USB3.0 Type A Port in rear, 3* USB 2.0 Type A Ports in rear

Expansion Interface: 1* Mini PCIe with PCIeX1\USB2.0, support wifi and 3G etc.

Storage: 1* 2.5" SATA HDD or SSD, SATA2.0 3Gbps; 1*mSATA

1.3.2 Display and Touch

Chipset: Intel® HD Graphics

Display Memory: Shared system memory

HDMI Resolution: Up to 1920x1080@60Hz

LCD

Type	10.1 inches TFT LED
Resolution	1280*800
Color	16.7M colors
Pixel Pitch(mm)	0.1695*0.1695
Brightness(cd/㎡)	350(S00X), 500(T00X)
Viewing Angle	85 degree(left), 85 degree(right), 85 degree(up), 85 degree(down)
Operating Temperature	-20℃~70℃
Back light lifetime	15,000 hours(S00X), 50,000 hours(T00X)

TOUCH

Type	5-wire resistive touch	Projected capacitive touch
Resolution	Gap less	Gap less
Light transmittance	83%	90%
Interface	USB	USB
Power Consumption	+5 V @200 mA	+5 V @300 mA
OS	Windows and Linux	Windows and Linux
Click Lifetime	15 million times	3000 million times

1.3.3 Ethernet

Chipset: Intel® I211AT PCI express gigabit ethernet controller

Speed: 10/100/1000 Mbps integrated

Interface: 2*RJ45

1.3.4 Audio (Optional)

Chip: Realtek ALC282 Audio codec integrated

Speaker: 2*2W speaker out

1.3.5 Power Consumption

Input Voltage: DC 12~24V, 4-pin connector

Power Consumption: TDP 12V/1.35A (Intel® J1900 1.6GHz+4GB DDR3L)

Power Adapter: AC to DC 12V/5A, 60 W

Power Requirement: Minimum power input: DC 12V/1.8A

1.4 Environmental Specifications

Operating temperature:

-10 ~ 55° C (Wide operating temperature mSATA/SSD)

0 ~ 50° C (Conventional operating temperature SSD&HDD)

Relative humidity: 10~95% @ 40°C (non-condensing)

Storage temperature: -20 ~ 60°C (-4 ~ 140°F)

Vibration loading during operation:

With HDD: 1Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1hr/axis

Shock during operation:

With HDD: 10G, IEC 60068-2-27, half sine, 11ms duration

EMC: CE, FCC Class A

1.5 Mechanical Specifications

ALAD-A1001T Dimension: **Unit: mm**

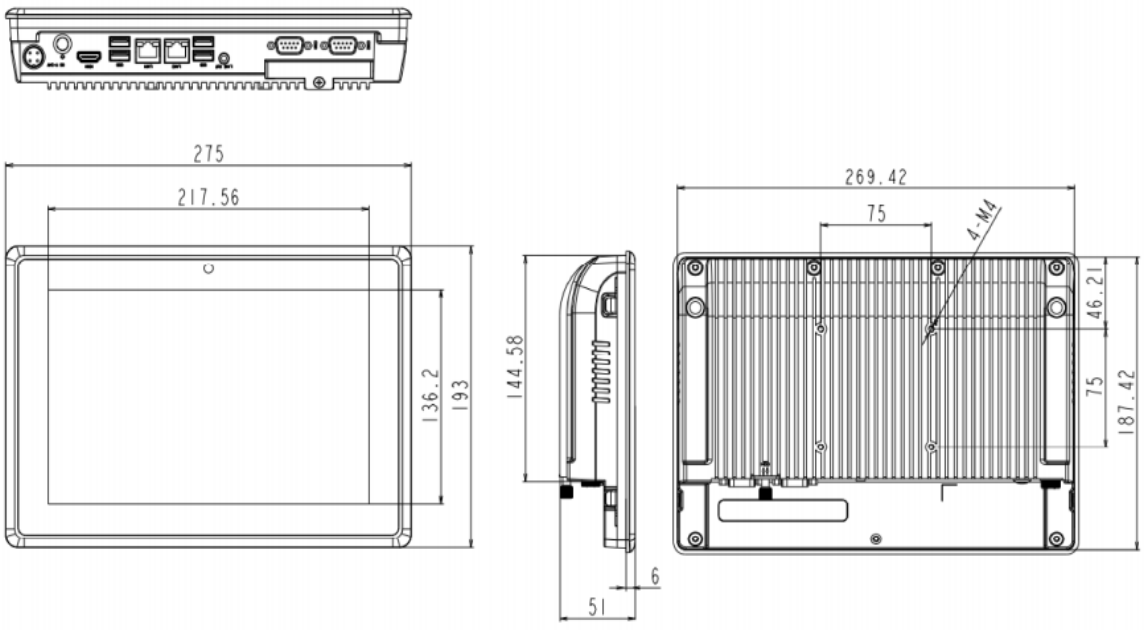

Figure 1.1

CHAPTER 2

Hardware Installation

2.1 Introduction

The following sections show the internal jumper settings and the external connectors and pin assignments for applications.

2.2 Jumpers and connectors

The ALAD-A1001T Embedded Panel Computer consists of a JHC SBC (Single Board Computer) board ECM-I714 that is housed in an aluminum plate chassis. Your HDD and SDRAM, are all readily accessible by removing the aluminum cover. Any maintenance or hardware upgrades can be easily completed after opening the chassis.

Warning: Do not remove any mechanical parts until you have verified that no power is flowing within the Embedded Panel Computer. Power must be switched off and the power cord must be unplugged.

Main board Internal Diagram-Front Side:

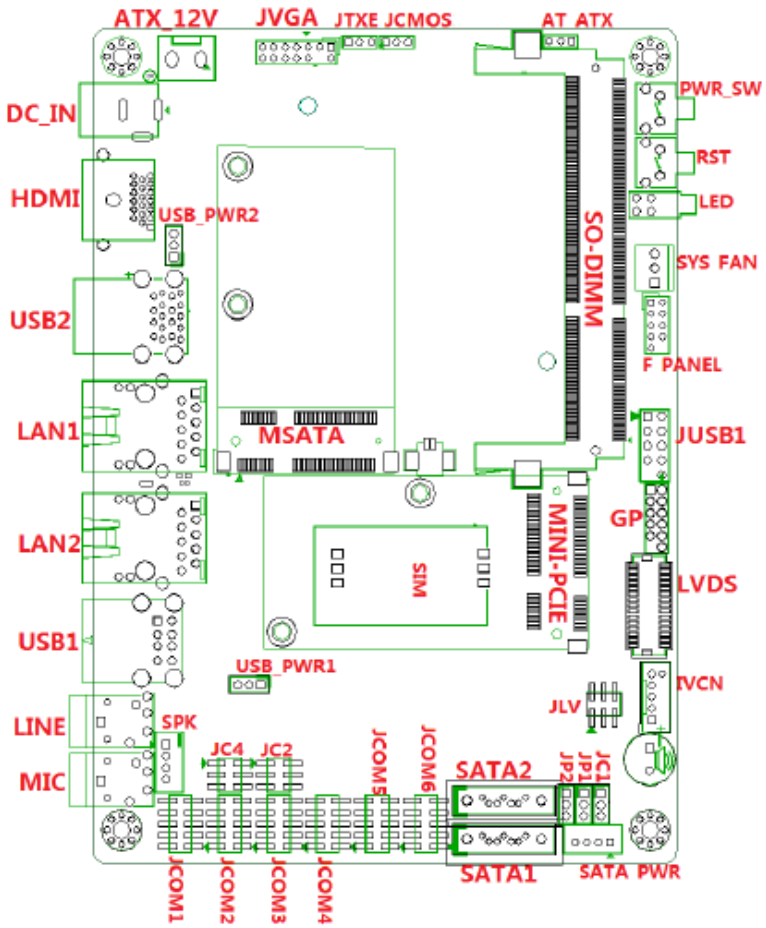

Figure 2.1 ECM-I714 Diagram-Front Side

Main board internal diagram-back side:

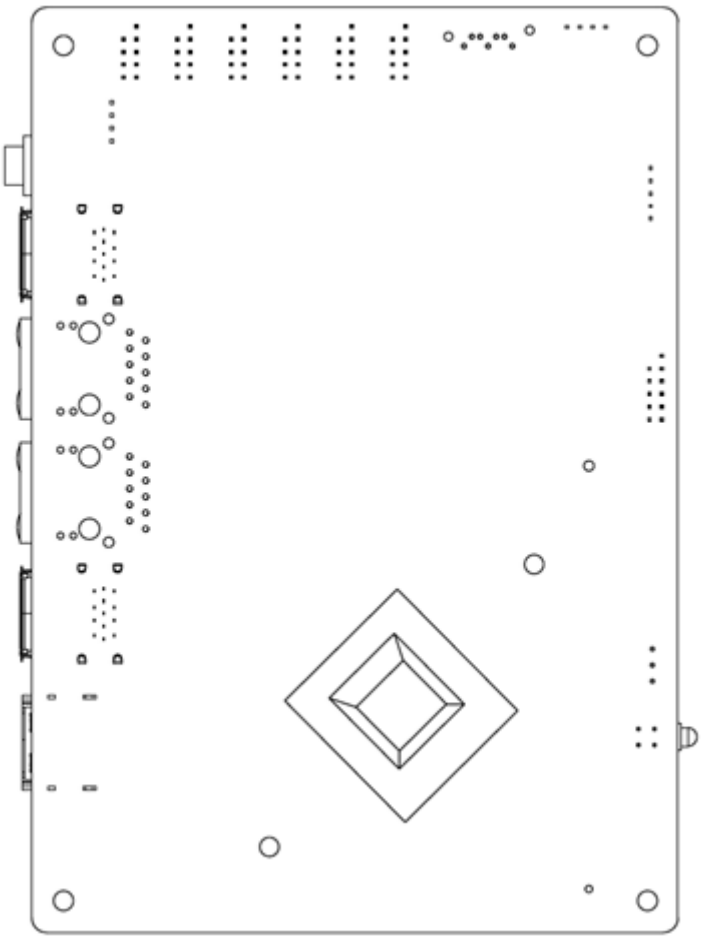

Figure 2.2 ECM-I714 diagram-back Side

2.2.1 Setting Jumpers

You can configure your ALAD-A1001T to match the needs of your application by setting the jumpers. A jumper is the simplest kind of electrical switch. It consists of two metal pins and a small metal clip (often protected by a plastic cover) that slides over the pins to connect them. To —close "a jumper, you connect the pins with the clip. To —open "a jumper you remove the clip. Sometimes a jumper will have three pins, labeled 1, 2, and 3. In this case, you would connect either pins 1 and 2 or pins 2 and 3.

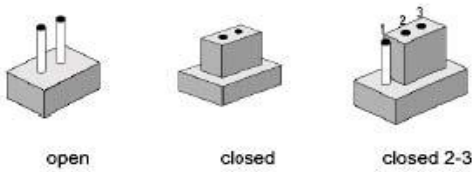

Figure 2.3

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

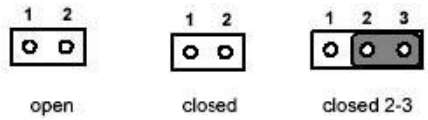

Figure 2.4

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

2.3 Jumper Location

The ALAD-A1001T Embedded Panel Computer has a number of jumpers inside the chassis that allows you to configure your system to suit your application. The table below lists the functions of the various jumpers. The table below shows the function of each of the board's jumpers.

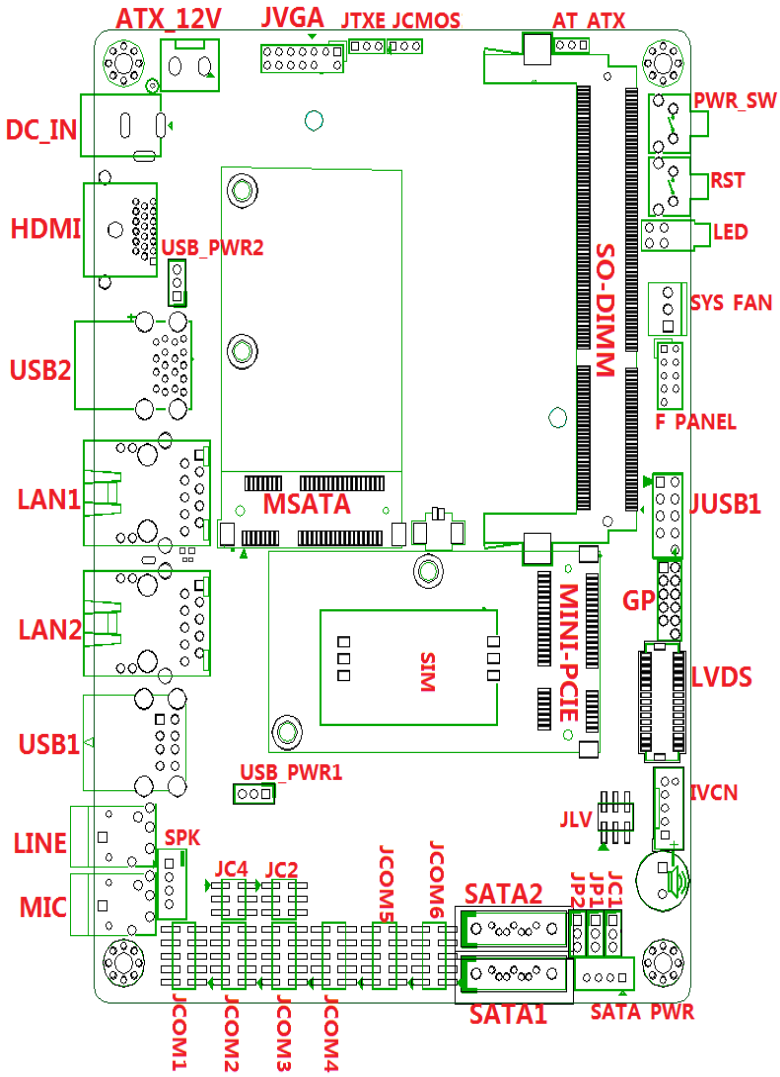

Figure 2.5

Jumpers

Jumper	Name	Description
JCMOS	Clear CMOS Data Setting	3-Pin Block
USB_PWR1, USB_PWR2	USB1、USB2 power Select	3-Pin Block
AT_ATX	Power on mode select	3-Pin Block
JC1	COM2 RS232/R485/R422 Mode Select	3-Pin Block
JLV	LVDS 12V/5V/3.3V power Select	6-Pin Block

2.3.1 JCMOS-Clear CMOS data Setting

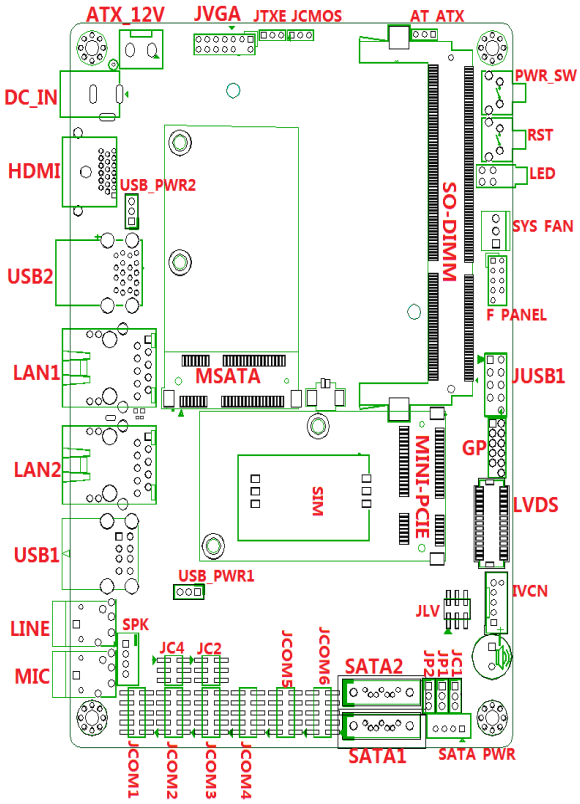

Figure 2.6

If you encounter the followings,

a) CMOS data becomes corrupted.

b) You forgot the supervisor or user password.

you can reconfigure the system with the default values stored in the ROM BIOS.

To load the default values stored in the ROM BIOS, please follow the steps below.

1. Power-off the system and unplug the power cord.

2. Set JCMOS pins 2 and 3 to On. Wait for a few seconds and set JMOS back to its default setting, pins 1 and 2 On.

3. Now plug the power cord and power-on the system.

2.3.2 USB_PWR1, USB_PWR2-USB1、USB2 Power Select

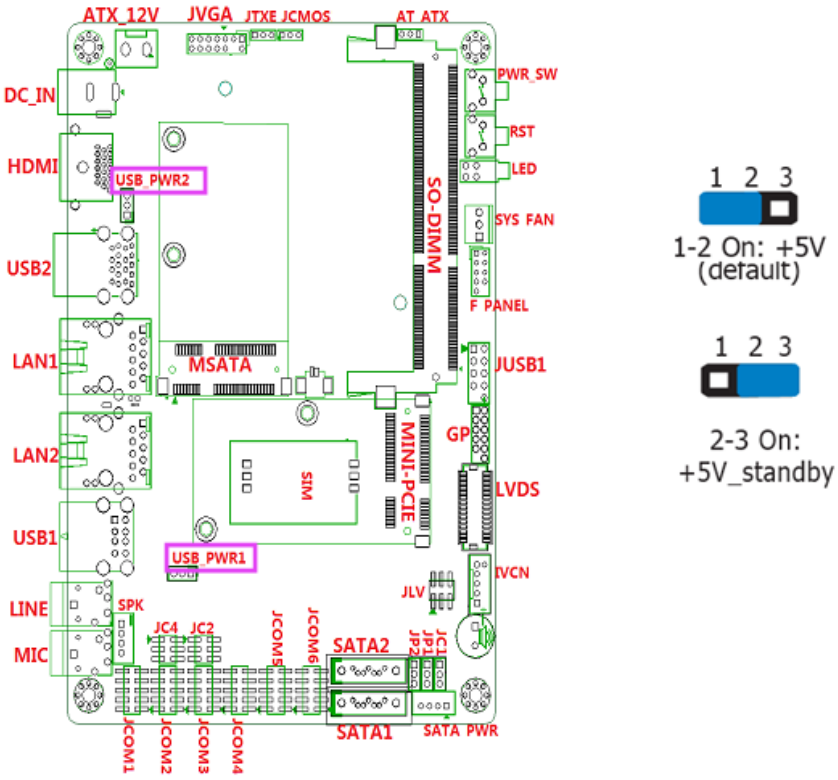

Figure 2.7

2.3.3 AT-ATX Power-on mode setting

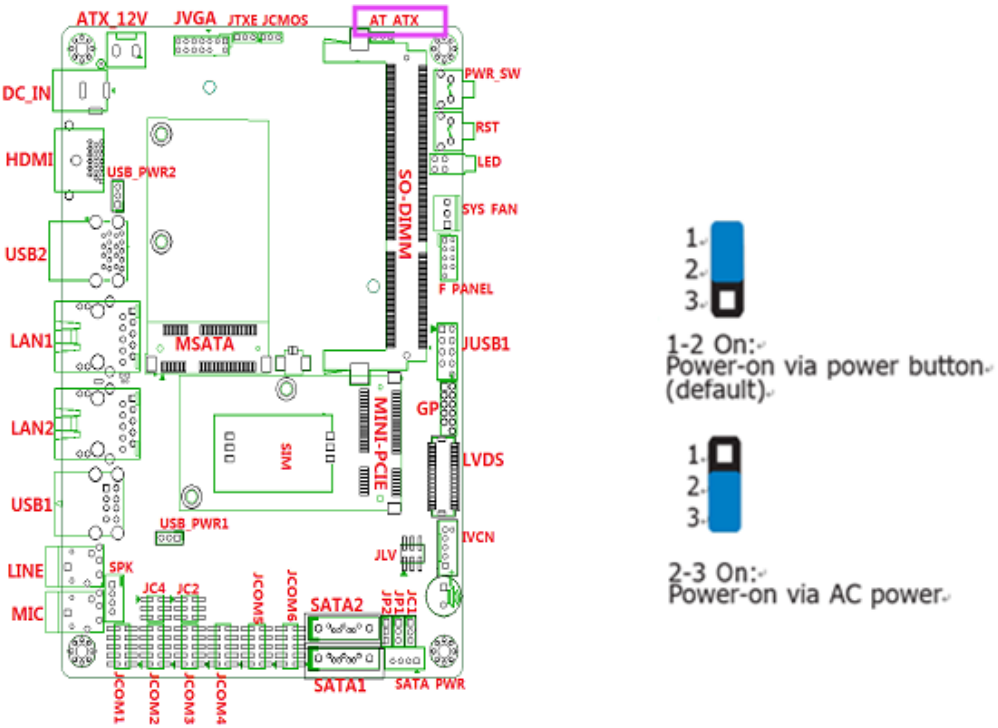

Figure 2.8

AT-ATX jumper is used to select the method of powering on the system. If you want the system to power-on whenever AC power comes in, connect pins 2 and 3 of the jumper. If you want to use the power button, connect pins 1 and 2 of AT-ATX.

When using AT-ATX "Power On" feature to power the system back on after a power failure occurs, the system may not power on if the power lost is resumed within 5 seconds (power flicker).

2.3.4 JC1-COM2 RS232/R485/R422 Mode Select

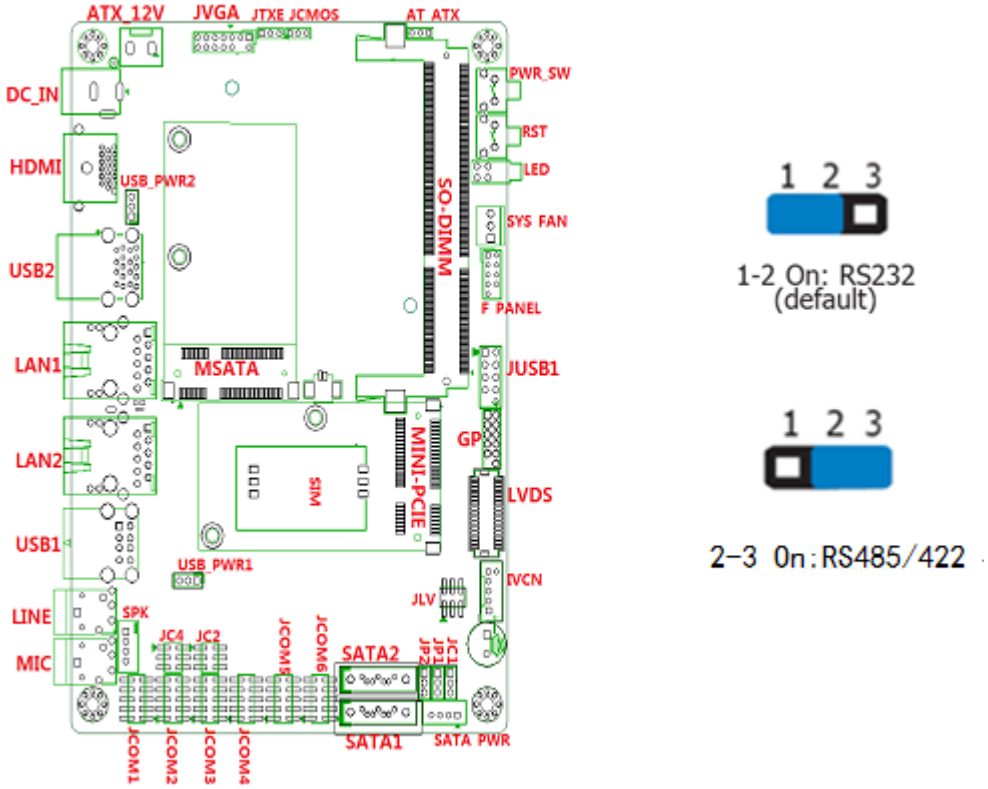

Figure 2.9

2.3.5 JLV-LVDS 12V/5V/3.3V Power supply select

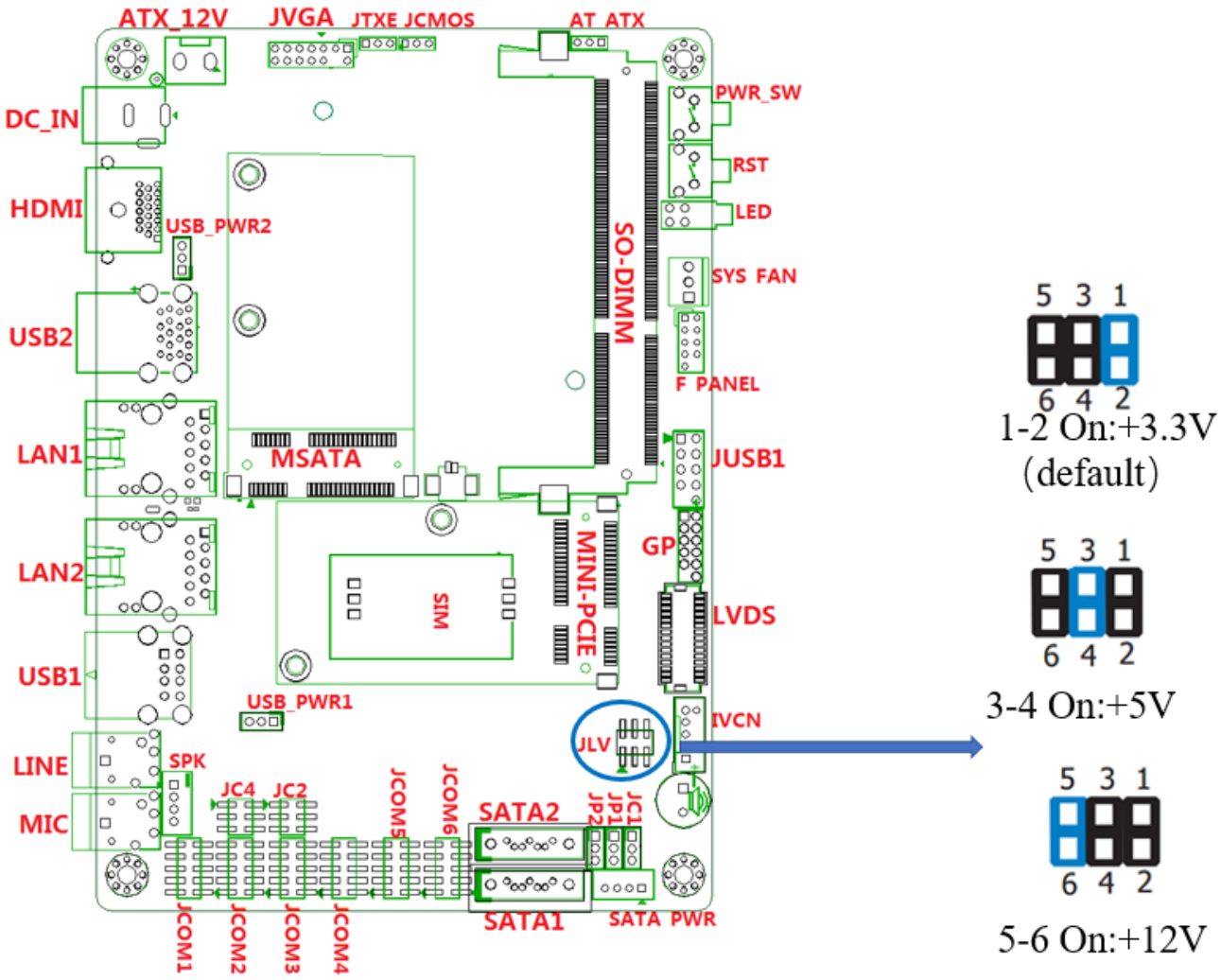

Figure 2.10

JLV jumper is used to select the power supplied of LVDS panel.

NOTE: Before powering-on the system, make sure that the power settings of JP8 match the LCD panel's specification. Selecting the incorrect voltage will seriously damage the LCD panel.

Tip: In addition to setting jump cap, also involves hardware changes. For detailed information please contact with local distributors, dealers or contact and sincere customer service.

2.4 I/O indication

Front view

Figure 2.11

Rear view

Figure 2.12

2.4.1 Ethernet Connector (LAN)

The ALAD-A1001T is equipped with two Intel I211AT chips for 10/100/1000Mbps Ethernet controllers. The Ethernet port provides a standard RJ-45 connector with LED indicators on the front side to show its Active/Link status (Green LED) and Speed status (white LED). Table 2.1 for pin assignments

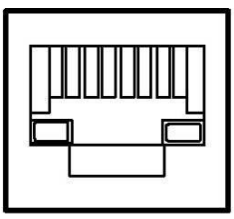

Figure 2.13 Ethernet Connector

Table 2.1: RJ-45 Connector pin assignments	
Pin	10/100/1000BaseT Signal Name
1	TX+(10/100), BI_DA+(GHz)
2	TX-(10/100), BI_DA-(GHz)
3	RX+(10/100), BI_DB+(GHz)
4	BI_DC+(GHz)
5	BI_DC-(GHz)
6	RX-(10/100), BI_DB-(GHz)
7	BI_DD+(GHz)
8	BI_DD-(GHz)

2.4.2 Power Input Connector (DC-IN)

The ALAD-A1001T uses a 4-pin MicroTCA, DC IN 9~24V.

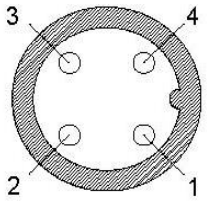

Figure 2.14 4-pin MicroTCA

Table 2.2: Power Connector Pin Assignments	
Pin	Signal Name
1	+9~24V
2	+9~24V
3	GND
4	GND

2.4.3 USB Connector

The USB device allows data exchange between your computer and a wide range of simultaneously accessible external Plug and Play peripherals.

The ECM-I714 board is equipped with one USB 3.0 port (USB 1), three USB 2.0 ports (USB 2-3-4).

3 USB2.0 ports by type A connectors in the rear. Please refer to Table 2.4 for their pin assignments.

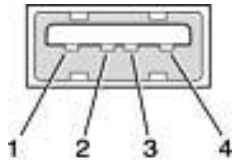

Figure 2.15 USB2.0 connector

Table 2.3: USB2.0 Connector	
Pin	Signal name
1	VCC
2	USB_P0
3	USB_P0+
4	GND

1 USB3.0 ports by type A connectors in rear IO. Please refer to Table 2.5 for their pin assignments.

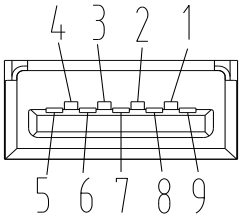

Figure 2.16 USB3.0 Connector

Table 2.4: USB3.0 Port Pin Assignments	
Pin	Signal Name
1	VBUS
2	D-
3	D+
4	GND
5	StdA_SSRX-
6	StdA_SSRX+
7	GND_DRAIN
8	StdA_SSTX-
9	StdA_SSTX+
Shell	Shield

2.4.4 COM1/2 Connector

COM 1 and COM 2 are D-sub 9-pin connectors, COM1 is RS232, COM2 can be configured as RS232/RS422/RS485 by Jumper setting. The serial ports are asynchronous communication ports with 16C550A-compatible UARTs that can be used with modems, serial printers, remote display terminals, and other serial devices.

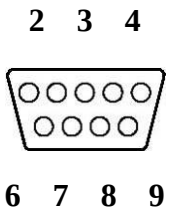

Figure 2.17 COM1/2 Connector

Table 2.5: COM1/2 Serial Port Pin Assignments			
Pin	RS232 Signal	RS422 Signal	RS485 Signal
1	DCD	TX-	DATA+
2	RXD	TX+	DATA-
3	TXD	RX+	NC
4	DTR	RX-	NC
5	GND	GND	GND
6	DSR	NC	NC
7	RTS	NC	NC
8	CTS	NC	NC
9	RI	NC	NC

2.4.5 SATA2.0 (Serial ATA) Connector

The ALAD-A1001T contains a Serial ATA 2.0 port with data transfer rate up to 3Gb/s. The Serial ATA connector is used to connect Serial ATA devices.

Figure 2.18 SATA2.0 Connector

Table 2.6: SATA Pin Assignments			
Pin	Signal Name	Pin	Signal Name
1	GND	5	RXN
2	TXP	6	RXP
3	TXN	7	GND
4	GND		

2.4.6 SATA (Serial ATA) Power Connector

1*4 Pin 2.54mm Pitch wafer Connector, Which used to provide 5V/12V power for SATA devices.

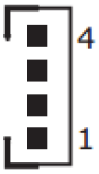

Figure 2.19 SATA Power Connector

Table 2.7: SATA Power Pin Assignments	
Pin	Signal Name
1	DC 12V
2	GND
3	GND
4	DC 5V

2.5 Installation

2.5.1 HDD/SSD Installation

Step 1. Unscrew 1 screw on the HDD cover, and open the HDD cover.

Figure 2.20

Figure 2.21

Step 2. Screw the HDD/SSD on the drive bay though 4 screws.

Figure 2.22

Step 3. Push the drive bay into the SATA connector, and screw 1 screw to lock drive bay.

Figure 2.23

2.5.2 Installing SODIMM module

Step 1. Unscrew the 9 screws on the back chassis, and open the back chassis.

Figure 2.24

Figure 2.25

Step 2.Pull out 4 cable connectors from front IO card、touch panel and LCD.

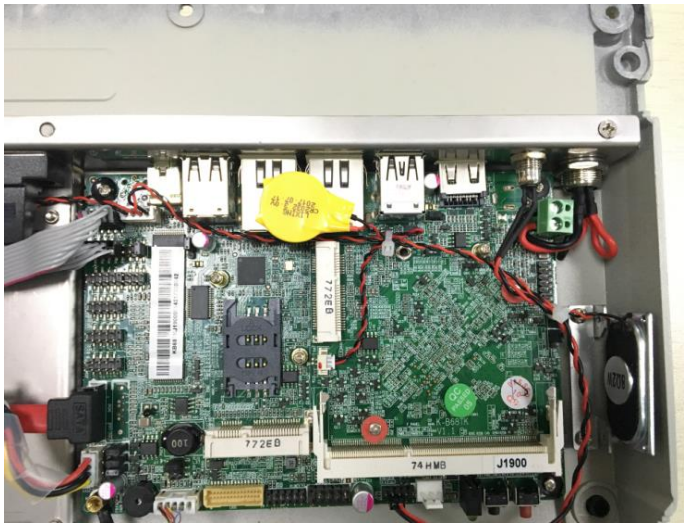

Figure 2.26

Step 3. Hold the module with its notch aligned with the socket of the board and insert it at a 30 degrees angle into the socket. Push down the module until the clips at each end of the socket lock into position.

Figure 2.27

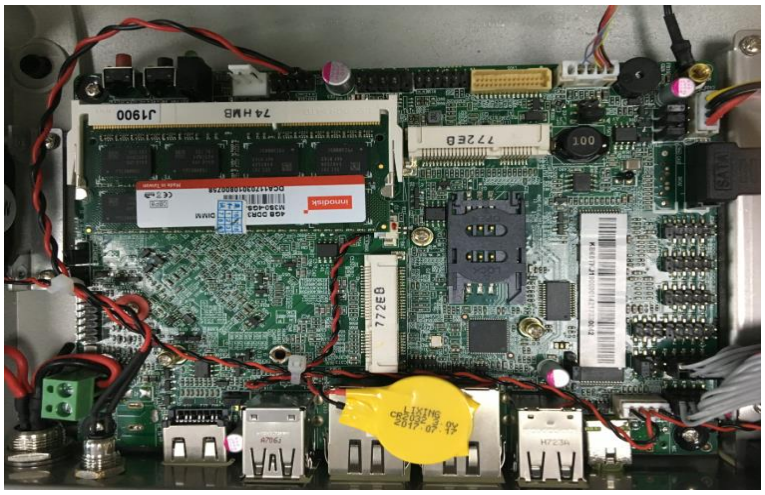

Figure 2.28

Step 4. Connect 4 cable connectors into front IO card、touch panel and LCD

Figure 2.29

Step 5. Close the chassis back to the front panel, and screw the 9 screws on the chassis.

Figure 2.30

2.5.3 Installing mSATA Flash Card module

Step 1. Unscrew the 9 screws on the back chassis, and open the back chassis .

Figure 2.31

Figure 2.32

Step 2.Pull out 4 cable connectors from front IO card、touch panel and LCD.

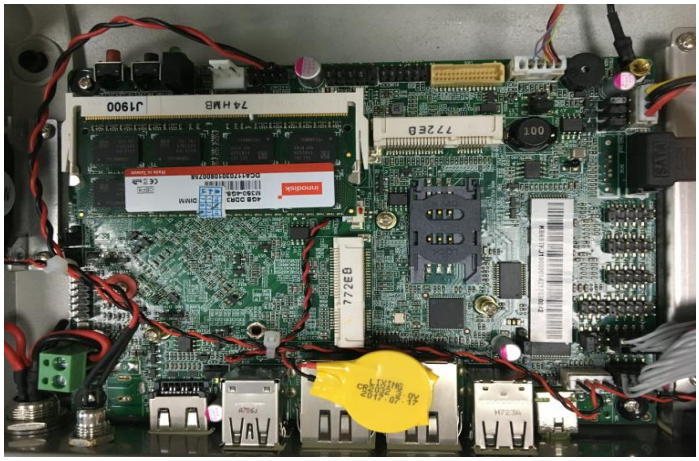

Figure 2.33

Step 3. Hold the module with its notch aligned with the socket of the board and insert it at a 30 degrees angle into the socket. screw 1 screws to the holder as shown in the following picture.

Figure 2.34

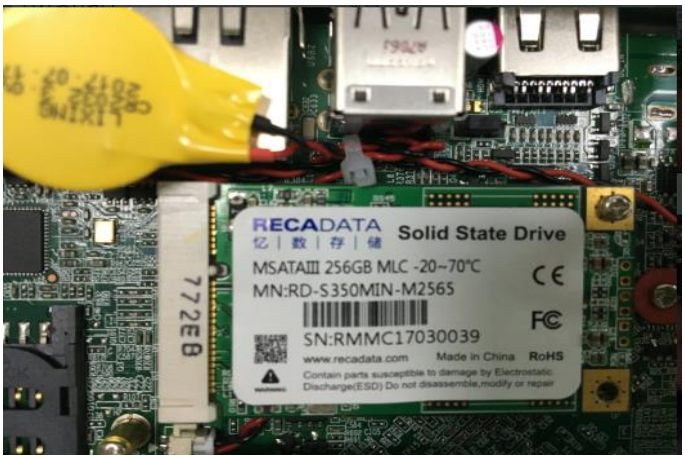

Figure 2.35

Step 4. Connect 4 cable connectors into front IO card、touch panel and LCD.

Figure 2.36

Step 5. Close the chassis back to the front panel, and screw the 9 screws on the chassis.

Figure 2.37

2.5.4 Panel Mounting

Step 1. Install the panel PC into the panel opening.

Figure 2.38

Step 2. Pull out the 4 clamps from the holes around the two sides of the bezel.

Figure 2.39

Figure 2.40

Step 3. Insert the screws into each clamp and fasten them.

Figure 2.41

Figure 2.42

CHAPTER 3

Driver Installation

The ALAD-A1001T comes with a CD-ROM that contains all drivers and utilities that meet your needs.

4.1 About the Software DVD-ROM/CD-ROM

The support software DVD-ROM/CD-ROM that is included in the motherboard package contains all the drivers and utility programs needed to properly run the bundled products. Below you can find a brief description of each software program, and the location for your motherboard version. More information on some programs is available in a README file, located in the same directory as the software. Before installing any software, always inspect the folder for files named README.TXT or something similar. These files may contain important information that is not included in this manual.
Never try to install all software from folder that is not specified for use with your motherboard.

4.2 Auto-installing under Windows 8

The Auto-install DVD-ROM/CD-ROM makes it easy for you to install the drivers and software for your motherboard.

If the Auto-install DVD-ROM/CD-ROM does not work on your system, you can still install drivers through the file manager for your OS (for example, Windows Explorer). Refer to the Utility Folder Installation Notes later in this chapter.

The support software DVD-ROM/CD-ROM disk loads automatically under Windows 10. When you insert the DVD-ROM/CD-ROM disk in the DVD-ROM/CD-ROM drive, the autorun feature will automatically bring up the install screen. The screen has three buttons on it, Setup, Browse CD and Exit.

If the opening screen does not appear; double-click the file "setup.exe" in the root directory.

Drivers Tab

Table 4.1: Drivers Tab	
Setup	Click the Setup button to run the software installation program. Select from the menu which software you want to install.
Browse CD	The Browse CD button is the standard Windows command that allows you to open Windows Explorer and show the contents of the support disk. Before installing the software from Windows Explorer, look for a file named README.TXT or something similar. This file may contain important information to help you install the software correctly. Some software is installed in separate folders for different operating systems, such as Windows 7/8. Always go to the correct folder for the kind of OS you are using. In install the software, execute a file named SETUP.EXE by double-clicking the file and then following the instructions on the screen.
Exit	The Exit button closes the Auto Setup window.

Utilities Tab

Lists the software utilities that are available on the disk.

Information Tab

Displays the path for all software and drivers available on the disk.

Running Setup

Follow these instructions to install device drivers and software for the motherboard:

1. Click Setup. The installation program begins:

The following screens are examples only. The screens and driver lists will be different according to the motherboard you are installing.

2. Click Next. The following screen appears:

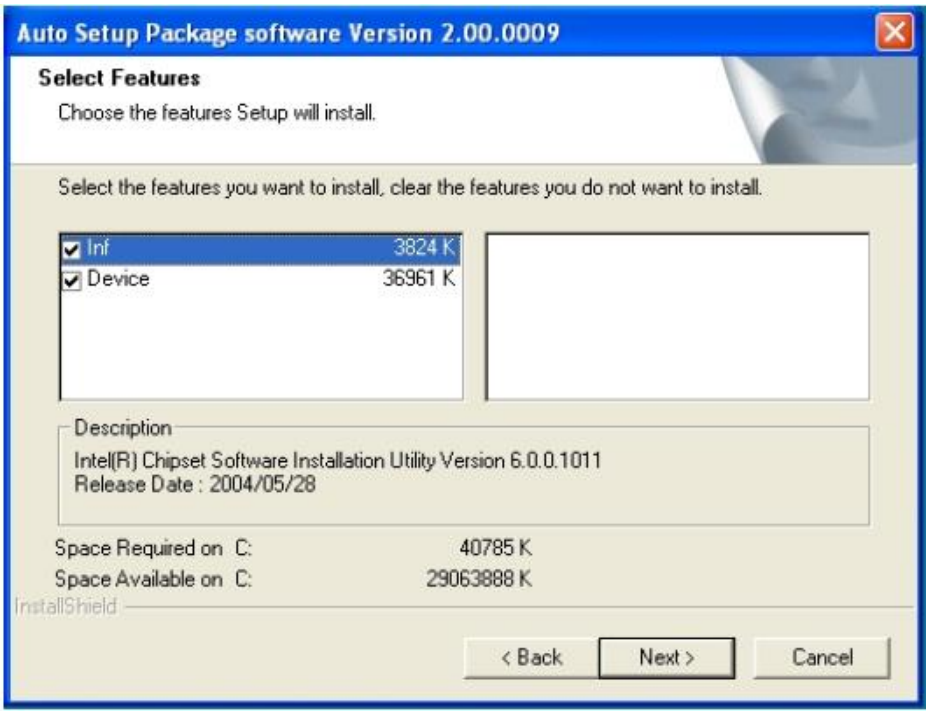

Figure 4.1

3. Check the box next to the items you want to install. The default options are recommended.

4. Click Next run the Installation Wizard. An item installation screen appears:

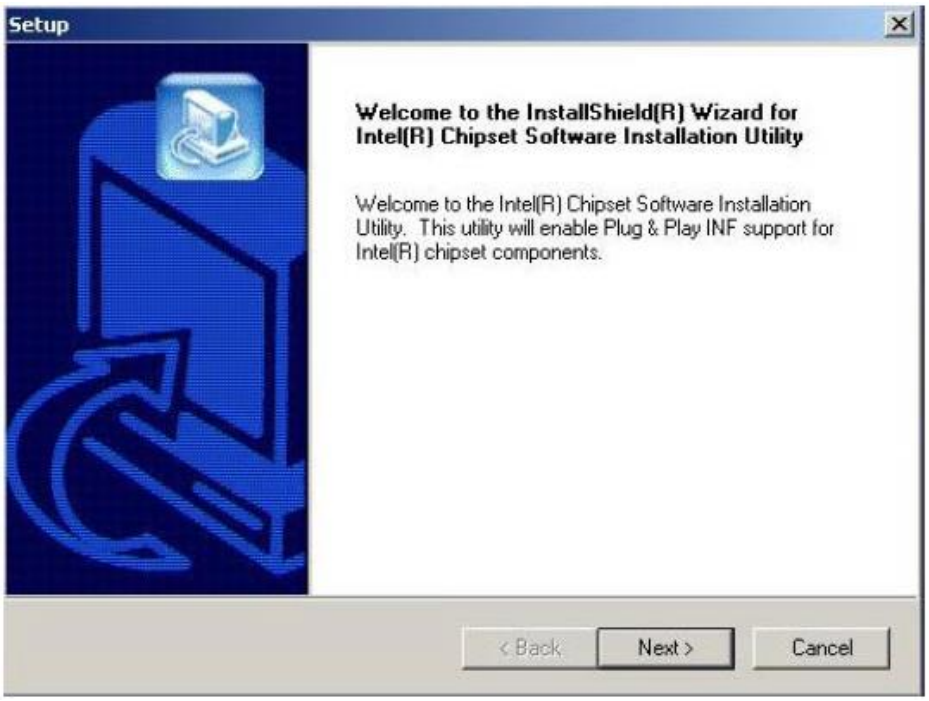

Figure 4.2

5.Follow the instructions on the screen to install the items.

Drivers and software are automatically installed in sequence. Follow the onscreen instructions, confirm

commands and allow the computer to restart a few times to complete the installation.

Windows 8 will show the following screen after system restart, you must select "Desktop" in the bottom left to install the next driver.

Figure 4.3

Windows 8 will appear below UAC (User Account Control) message after the system restart. You must select "Allow" to install the next driver.

Continue this process to complete the driver installation.

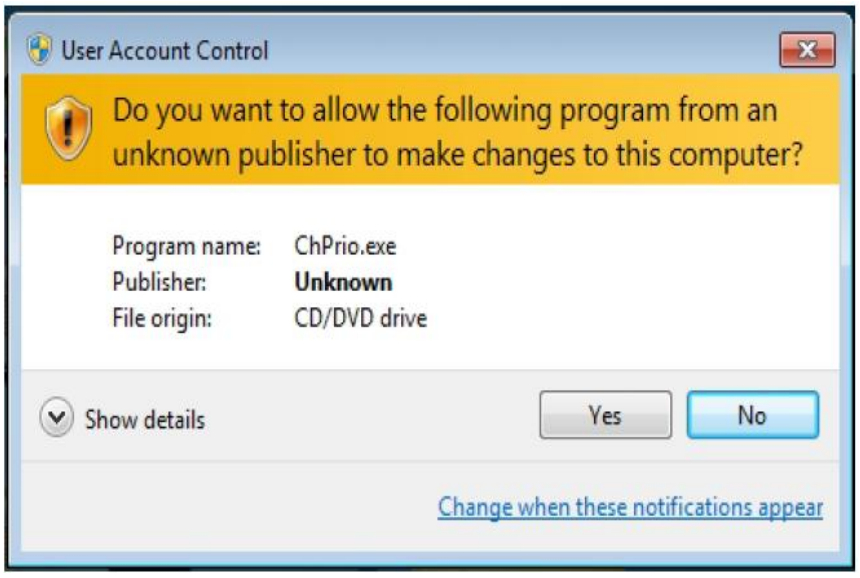

Figure 4.4

4.3 Manual Installation

Insert the disk in the DVD-ROM/CD-ROM drive and locate the PATH.DOC file in the root directory.

This file contains the information needed to locate the drivers for your motherboard.

Look for the chipset and motherboard model; then browse to the directory and path to begin installing the

drivers. Most drivers have a setup program (SETUP.EXE) that automatically detects your operating system before installation. Other drivers have the setup program located in the operating system subfolder.

If the driver you want to install does not have a setup program, browse to the operating system subfolder and locate the readme text file (README.TXT or README.DOC) for information on installing the driver or software for your operating system.

4.4 Utility Software Reference

All the utility software available from this page is Windows compliant. They are provided only for the

convenience of the customer. The following software is furnished under license and may only be used or copied in accordance with the terms of the license. These software(s) are subject to change at anytime without prior notice. Please refer to the support disk for available software.