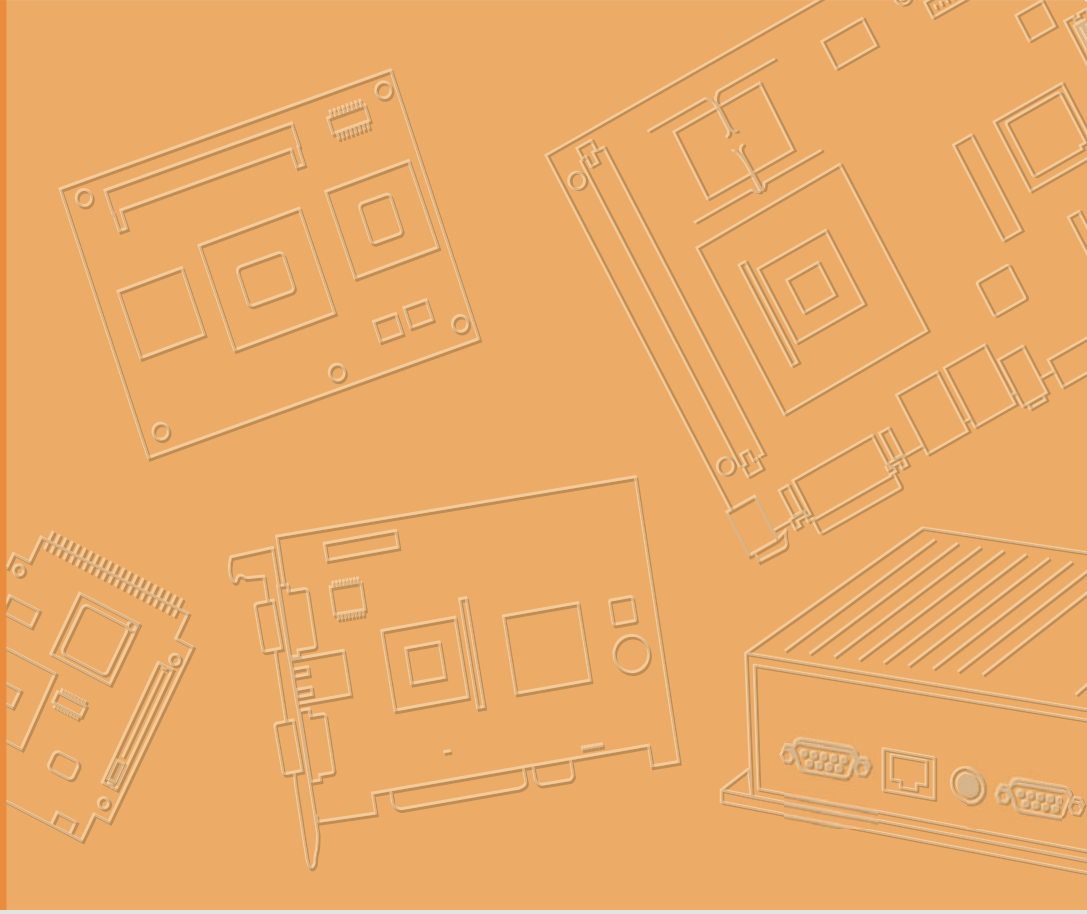

User Manual

UTC-520A/B/C

AMD T40E (UTC-520A)/ Intel Atom D2550 (UTC-520B)/ Intel Core i7 (UTC-520C) Processor- based Ubiquitous 21.5” LCD Touch Computer

ADVANTECH

Enabling an Intelligent Planet

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For more information on this and other Advantech products, please visit our websites at:

http://www.advantech.com

http://www.advantech.com/ppc

For technical support and service, please visit our support website at:

http://support.advantech.com

This manual is for the UTC-520A/B/C.

Part No. 2008C52020 Edition 1

Printed in Taiwan February 2014

Declaration of Conformity

FCC Class A

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Warning! *Any changes or modifications made to the equipment which are not expressly approved by the relevant standards authority could void your authority to operate the equipment.*

Packing List

Before you begin installing UTC-520A/B/C, please make sure that the following materials have been shipped:

- UTC-520A/B/C series
- Accessories for UTC-520A/B/C
  - DC 12 V/60 W power Adapter (UTC-520A/B), DC 12 V/84 W power Adapter (UTC-520C)
  - Mounting kits and packet of screws

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

Technical Support and Assistance

1. Visit the Advantech web site at http://support.advantech.com where you can find the latest information about the product.
2. Contact your distributor, sales representative, or Advantech'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

Warning! *Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.*

Warning!

1. *Input voltage rated Input voltage rated 12 V, 5 A (UTC-520A/B), Input voltage rated 12 V, 7 A (UTC-520C)*
2. *Use a 3 V @ 195 mA lithium battery*
3. *Packing: please carry the unit with both hands, handle with care*
4. *Maintenance: to properly maintain and clean the surfaces, use only approved products or clean with a dry applicator*
5. *CompactFlash: Turn off power before inserting or removing CompactFlash storage card.*

Contact information:

Our European representative: Advantech Europe GmbH Kolberger Strafle 7

D-40599 Dβsseldorf, Germany

Tel: 49-211-97477350

Fax: 49-211-97477300

Safety Instructions

1. Read these safety instructions carefully.
2. Keep this User Manual for later reference.
3. Disconnect this equipment from any AC outlet before cleaning. Use a damp cloth. Do not use liquid or spray detergents for cleaning.
4. For plug-in equipment, the power outlet socket must be located near the equipment and must be easily accessible.
5. Keep this equipment away from humidity.
6. Put this equipment on a reliable surface during installation. Dropping it or letting it fall may cause damage.
7. The openings on the enclosure are for air convection. Protect the equipment from overheating. DO NOT COVER THE OPENINGS.
8. Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.
9. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
10. All cautions and warnings on the equipment should be noted.
11. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient overvoltage.
12. Never pour any liquid into an opening. This may cause fire or electrical shock.
13. Never open the equipment. For safety reasons, the equipment should be opened only by qualified service personnel.
14. If one of the following situations arises, get the equipment checked by service personnel:
15. The power cord or plug is damaged.
16. Liquid has penetrated into the equipment.
17. The equipment has been exposed to moisture.
18. The equipment does not work well, or you cannot get it to work according to the user's manual.
19. The equipment has been dropped and damaged.
20. The equipment has obvious signs of breakage.
21. DO NOT LEAVE THIS EQUIPMENT IN AN ENVIRONMENT WHERE THE STORAGE TEMPERATURE MAY GO BELOW -20° C (-4° F) OR ABOVE 60° C (140° F). THIS COULD DAMAGE THE EQUIPMENT. THE EQUIPMENT SHOULD BE IN A CONTROLLED ENVIRONMENT.
22. CAUTION: DANGER OF EXPLOSION IF BATTERY IS INCORRECTLY REPLACED. REPLACE ONLY WITH THE SAME OR EQUIVALENT TYPE RECOMMENDED BY THE MANUFACTURER, DISCARD USED BATTERIES ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.
23. The sound pressure level at the operator's position according to IEC 704-1:1982 is no more than 70 dB (A).

DISCLAIMER: This set of instructions is given according to IEC 704-1. Advantech disclaims all responsibility for the accuracy of any statements contained herein.

Contents

Chapter 1

General Information

This chapter gives background information on the UTC-520A/B/C.

Sections include:

- **Introduction**
- **General Specifications**
- **LCD Specifications**
- **Dimensions**

1.1 Introduction

The UTC-520A/B/C is an Intel low-power AMD T40E / Intel Atom D2550 / Intel Core i7 processor computer that is designed to serve as an interactive self-service terminal and as a multimedia computer. It is a PC-based system with 21.5" TFT LCD display, and on-board PCIe Ethernet controller, 3 Com Port (2 COM port for UTC-520C) and 1 VGA connector. With a built in internal IDE connector (for CF card), one SATA connector for HDD and a mini PCIe expansion socket, the UTC-520A/B/C is a compact and user-friendly multi-function computer. In addition, its “fit anywhere” design makes it very flexible and able to be used in many different kinds of installations. It can be wall mounted or stood upright on a desktop.

For system integrators, this simple, complete, compact and highly integrated multimedia system lets you easily build UTC-520A/B/C into your applications. Common industrial applications include self-transaction & healthcare, information kiosk & interactive signage. UTC-520A/B/C is a reliable, cost-effective solution for your application requirements.

1.2 General Specifications

1.2.1 General

- **Dimensions (W x H x D):** 517.64 mm (L) x 313.51 mm (H) x 43.5 mm (D)
- **Weight:** 8 kg
- **Power supply:** ATX type Input Voltage: +12 Vdc, 5 A (UTC-520A/B) / +12 Vdc, 7 A (UTC-520C)
- **Power adaptor:** AC/DC (standard built in)
  - Input voltage:100 ~ 240 V_{AC}
  - Output voltage: 12 V @ 5 A (UTC-520A/B) / 12 V @ 7 A (UTC-520C)
- **Disk drive housing:** Space for one 2.5" SATA HDD
- **Front panel:** IP65/NEMA4 compliant

1.2.2 Standard PC functions

- **CPU:**
  - Onboard AMD G- Series T40E Dual-core 1.0 GHz (UTC-520A)
  - Onboard Intel Atom Dual Core D2550 1.8 GHz (UTC-520B)
  - Onboard Intel Core i7 3517UE 1.7 GHz (UTC-520C)
- **BIOS:**
  - AMI EFI 32-Mbit (UTC-520A)
  - AMI EFI 16-Mbit (UTC-520B)
  - AMI EFI 64-Mbit (UTC-520C)
- **System chipset:**
  - AMD G-series + A50M FCH (UTC-520A)
  - Intel Atom D2550 + NM10 (UTC-520B)
  - Intel Core i7 3517UE + Intel QM77 (UTC-520C)
- **2nd level cache:**
  - 512 KB (UTC-520A)
  - 1 MB (UTC-520B)
  - 1 MB (L3, 4 MB / UTC-520C)
- **System memory:** SO-DIMM DDR3 up to 4G (UTC-520A/B)/SO-DIMM DDR3 up to 8G (UTC-520C)
- **Serial ports:** 3 x external COM (UTC-520A/B), 2 x external COM (UTC-520C)

- **Universal serial bus (USB) port:** Supports up to 4 x USB 2.0 (UTC-520A/B), Support up to 2 x USB 2.0 / 2 x USB 3.0 (UTC-520C)
- **Mini PCI-E bus expansion slot:** Accepts one mini PCI-E device (Wire less LAN card), UTC-520B with SIM Holder
- **Solid State Disk:** Supports 1 x internal CFAST (UTC-520A/B)
- **Watchdog timer:** Single chip Watchdog 255-level interval timer, setup by software
- **Power management:** Full ACPI (Advanced Configuration and Power Interface) 2.0 Supports S0, S1, S3,S4, S5

1.2.3 VGA Interface

- **Chipset:** The GPU Contains a refresh of the third generation graphics core
- **Memory Size:** Up to 512 MB of dynamic video memory allocation
- **Interface:** VGA
- **Display mode:**

CRT: Analog RGB display output resolution up to 2048*1536 @ 60 Hz

Table 1.1: Internal Graphic Features

UTC-520A	UTC-520B	UTC-520C
DirectX 11 graphic with UVD 3.0	DirectX 9 and OpenGL 3.0	DirectX 11, DirectX 10.1, DirectX 10, DirectX 9 support
Up to 2 Display Port/TMDS	Display Port 1.1, HDMI 1.3a	OpenGL 3.0 support
Integrated VGA DAC	Support HDCP 1.3	Displayport 1.1a
Displayport 1.1a	Intel Display Power saving technology 6.0	Intel® HD Graphics 4000, with 500MHz Graphics Base Frequency and 1 GHz Graphics Max Dynamic Frequency
Integrated Graphics	SGXS45 Power VR Core 400/ 600 MHz	
Engine clock speed: 500 MHz or 280 MHz, dependent on OPN		

1.2.4 Audio Function

- **Audio:** High Definition Audio (HD), 3 W x 2 Speakers

1.2.5 LAN Function

- **Chipset:**
  - Realtek RTL8111E-VB-GR (UTC-520A)
  - Intel 82583V (UTC-520B)
  - Intel 82579LM + Intel82583V (UTC-520C)
- **Speed:** 1000 Mbps /Interface: 2 x RJ45
- **Wake-on-LAN:** Supports Wake-on-LAN function with ATX power control
- Supports LAN teaming (in Fault Tolerance)

1.2.6 Touchscreen (Optional)

Type	Analog Resistive 5 wires	Projected Capacitive Touch
Resolution	Continuous	
Light Transmission	80%	90%
Controller	USB interface	USB interface
Power Consumption	< 5 V @ 60 mA	
Software Driver	Supports Windows XP/ 7/ XPE	
Durability (Touches in a lifetime)	36 million	50,000 hours

1.2.7 Optional Modules

- **Memory:** 1 x SO-DIMM DDR3 1066 up to 4 GB (UTC-520A/B), up to 8 GB (UTC-520C)
- **HDD:** 2.5" SATA HDD
- **SSD:** Support 1 x internal CFAST (UTC-520A/B)
- **Operating System:** Windows XP, Windows 7, Embedded Windows 8 (UTC-520A/C)
- **Touchscreen:** Analog Resistive, Projective Capacitive
- **Power cord:** 1702002600 (US) 1702002605 (Europe)
- **Wireless LAN Module:**

  UTC-520A/B/C-WIFIE UTC-520A/B/C Wireless LAN module

  Peripherals for UTC-500 series

  UTC-P01-A0E (2M Wecam)

  UTC-P02-A0E (MSR)

  UTC-P03-A0E (RFID)

  UTC-P06-A0E (Smart Card Reader)

  UTC-P07-A0E (Barcode reader)

  Standard Floor Stand Kits

  UTC-K01-STANDE

  UTC-K02-STANDE

  UTC-R01-STANDE

1.2.8 Environment

- **Operating temperature:** 0 ~ 40° C (32 ~ 104° F)
- **Storage temperature:** -20 ~ 60° C
- **Relative humidity:** 10 ~ 95% @ 40° C (non-condensing)
- **Shock:** 10 G peak acceleration (11 ms duration)
- **Certification:** EMC: CE, FCC, BSMI, VCCI.
  Safety: UL 60950, CB, CCC, BSMI

Vibration: 5 ~ 500 Hz 1 Grms RMS random vibration

- **VESA Support:** 100 x 100 mm (Suggest screws type- M4 x 5)
- Supports landscape and portrait screen mode

1.3 LCD Specifications

- **Display type:** 21.5" TFT LCD
- **Max. resolution:** 1920 x 1080
- **Colors:** 16.7 M
- **Dot size (mm):** 248.25(H) X 248.25 (V)
- **Viewing angle:** 178 ° / 178°
- **Luminance:** 250 cd/m^2 (Optional 400)
- ***VR control:** Brightness could be modified through BIOS

Note! *The color LCD display installed in the UTC-520A/B/C is high-quality and reliable. However, it may contain a few defective pixels which do not always illuminate. With current technology, it is impossible to completely eliminate defective pixels. Advantech is actively working to improve this technology.*

1.4 Dimensions

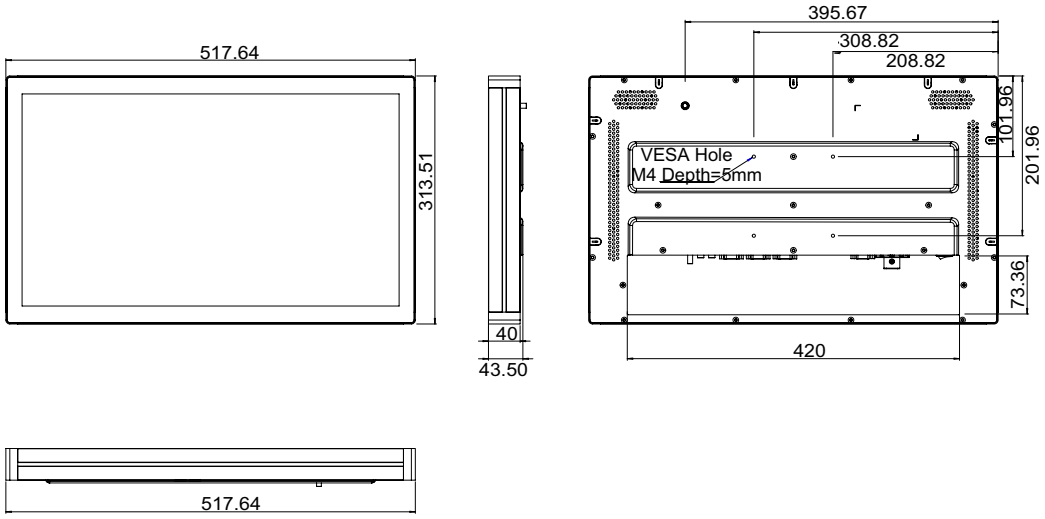


Figure 1.1 Dimensions of UTC-520A/B/C

Chapter 2

System Setup

This chapter details system setup on the UTC-520A/B/C.
Sections include:

- A Quick Tour of the UTC-520A/B/C
- Installation procedures
- Running the BIOS Setup Program
- Installing System Software

2.1 A Quick Tour of the UTC-520A/B/C

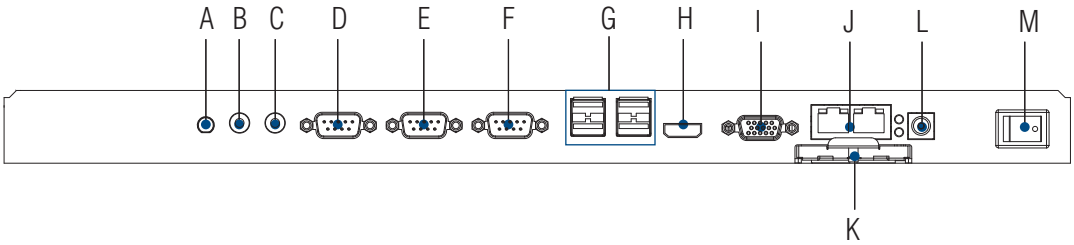
Before you start to set up the UTC-520A/B/C, take a moment to become familiar with the locations and functions of the controls, drives, connectors and ports, which are illustrated in the figures below.

When you place the UTC-520A/B/C upright on the desktop, its front panel appears as shown in Figure 2.1.

Figure 2.1 Front view of UTC-520A/B/C

When you turn the UTC-520A/B/C around and look at its rear cover, you will find the I/O section as shown in Fig. 2.2. (The I/O section includes various I/O ports, including serial ports, Ethernet ports, USB ports, the VGA, and CFAST/ HDMI/MIC-IN/LINE-OUT slot so on.)

Figure 2.2 Rear view of UTC-520A/B/C



A. Antenna Port
B. Line-out
C. Min-in
D. COM3 (UTC-520A/B)
E. COM2
F. COM1
G. USB 2.0 x 4 (UTC-520A/B)
H. HDMI
I. VGA
J. LAN Ports x 2
K. CFAST (UTC-520A/B)
L. DC Input
M. Power switch

2.2 Installation Procedures

2.2.1 Connecting the Power Cord

The UTC-520A/B/C can be powered by a DC electrical outlet. Be sure to always handle the power cords by holding the plug ends only. Please follow the Figure 2.5 to connect the male plug of the power cord to the DC inlet of the UTC-520A/B/C.

2.2.2 Connecting the Keyboard or Mouse

Before you start the computer, please connect the keyboard port on the I/O section of the UTC-520A/B/C.

2.2.3 Switching on the Power

When you look at the rear side of the UTC-520A/B/C, you will see the power switch as shown in Figure 2.2.

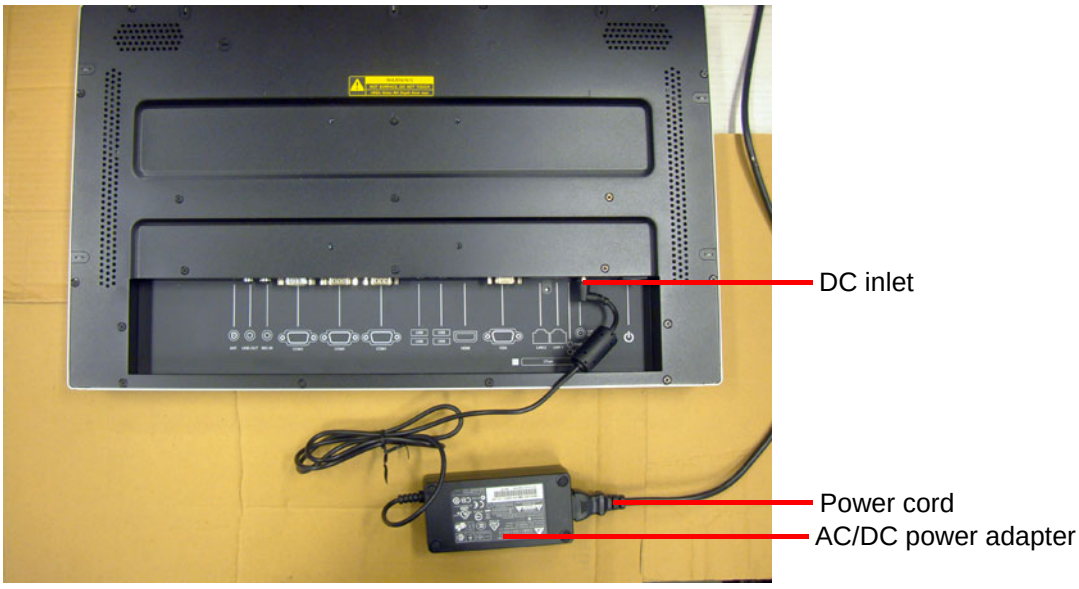


Figure 2.3 Connect the power cord to the DC inlet

2.3 Running the BIOS Setup Program

Your UTC-520A/B/C is likely to have been properly set up and configured by your dealer prior to delivery. You may still find it necessary to use the UTC-520A/B/C's BIOS (Basic Input-Output System) setup program to change system configuration information, such as the current date and time or your type of hard drive. The setup program is stored in read-only memory (ROM). It can be accessed either when you turn on or reset the UTC-520A/B/C, or by pressing the “Del” key on your keyboard immediately after powering on the computer.

The settings you specify with the setup program are recorded in a special area of memory called CMOS RAM. This memory is backed up by a battery so that it will not be erased when you turn off or reset the system. Whenever you turn on the power, the system reads the settings stored in CMOS RAM and compares them to the equipment check conducted during the power on self-test (POST). If an error occurs, an error message will be displayed on screen, and you will be prompted to run the setup program.

2.4 Installing System Software

Recent releases of operating systems from major vendors include setup programs which load automatically and guide you through hard disk preparation and operating system installation. The guidelines below will help you determine the steps necessary to install your operating system on the UTC-520A/B/C hard drive.

Note! *Some distributors and system integrators may have already pre-installed system software prior to shipment of your UTC-520A/B/C.*

Installing software requires an installed HDD. Software can be loaded in the UTC-520A/B/C using any of four methods:

2.4.1 Method 1: Ethernet

You can use the Ethernet port to download software to the HDD.

2.4.2 Method 2: External USB CD-ROM

If required, insert your operating system's installation or setup diskette into the diskette drive until the release button pops out.

The BIOS of UTC-520A/B/C supports system boot-up directly from the CD-ROM drive. You may also insert your system installation CD-ROM into the CD-ROM drive.

Power on your UTC-520A/B/C or reset the system by pressing the “Ctrl+Alt+Del” keys simultaneously. The UTC-520A/B/C will automatically load the operating system from the diskette or CD-ROM.

If you are presented with the opening screen of a setup or installation program, follow the instructions on screen. The setup program will guide you through preparation of your hard drive, and installation of the operating system. If you are presented with an operating system command prompt, such as A:\>, then you must partition and format your hard drive, and manually copy the operating system files to it. Refer to your operating system user manual for instructions on partitioning and formatting a hard drive.

2.5 Installing the Drivers

After installing your system software, you will be able to set up the Ethernet, XGA, audio, and touchscreen functions. All drivers are stored in a CD-ROM disc entitled “Drivers and Utilities” which can be found in your accessory box.

The various drivers and utilities in the CD-ROM disc have their own text files which helps users install the drivers and understand their functions. These files are a very useful supplement to the information in this manual.

Note! *The drivers and utilities used for the UTC-520A/B/C are subject to change without notice.*

If in doubt, check Advantech's website or contact our application engineers for the latest information regarding drivers and utilities.

Chapter 3

Hardware Installation & Upgrades

This chapter details installing the UTC-520A/B/C hardware.

Sections include:

- **Introduction**
- **Installing the 2.5" Hard Disk Drive (HDD)**
- **Installing the CFAST (UTC-520A/B)**
- **Installing the Memory**
- **Installing the Wireless LAN Card**

3.1 Introduction

The UTC-520A/B/C consists of a PC-based computer that is housed in an Aluminum extrusion. You can install a HDD, DRAM, and Compact Flash by removing the rear cover. Any maintenance or hardware upgrades can be easily completed after removing the rear cover.

Warning! *Do not remove the rear cover until you have verified that no power is flowing within the UTC-520A/B/C. Power must be switched off and the power cord must be unplugged. Every time you service the UTC-520A/B/C, you should be aware of this.*

3.2 Installing the 2.5" Hard Disk Drive (HDD)

You can attach one Serial Advanced Technology Attachment (SATA) hard disk drive to the UTC-520A/B/C's internal controller. The SATA controller supports faster data transfer and allows the SATA hard drive to exceed 150 MB. The following are instructions for installation:

1. Detach and remove the rear cover.
2. Place the HDD in the metal bracket, and tighten the screws (see Figure 3.1).
3. The HDD cable (SATA 7P+1*5P-2.5/SATA(15+7)P) is next to the metal brace. Connect the HDD cable to the motherboard. Plug the other end of the cable into the SATA hard drive. 520A: CN6 (SATA signals) + CN4 (SATA power); 520B: CN14 (SATA signals) + CN15 (SATA power).
4. Put the rear cover on and tighten the screws.

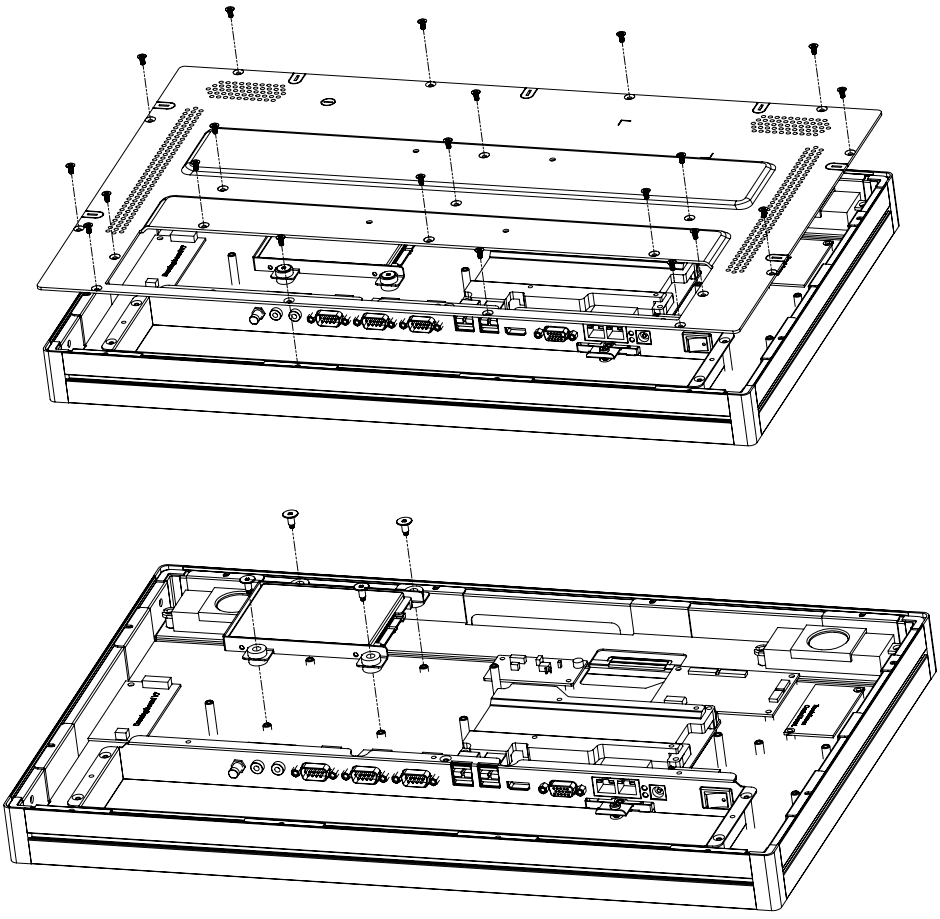


Figure 3.1 Installing primary 2.5" HDD

3.3 Installing the CFAST (UTC-520A/B)

1. Please follow the CFAST Card assembly as in the following diagram. (Please notice the direction of the CFAST)

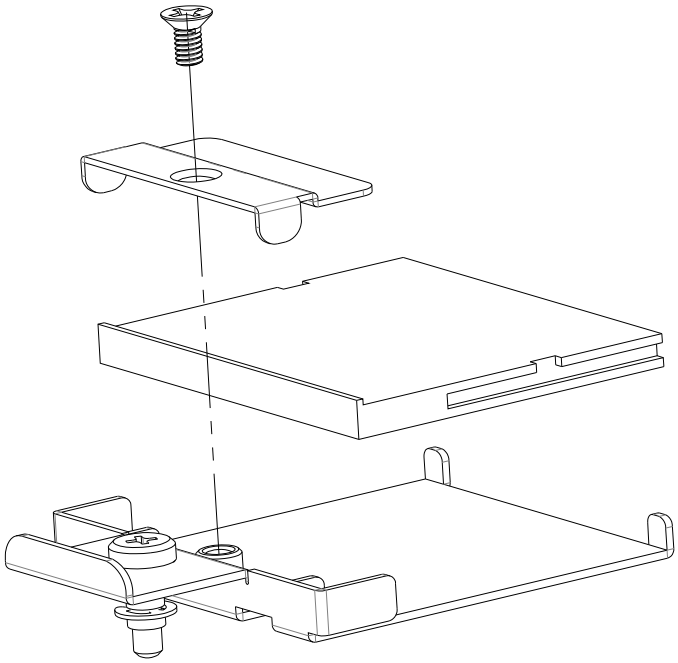


Figure 3.2 Installing the Compact Flash card

3.4 Installing the Memory

1. Detach and remove the rear cover.
2. Remove the 4 pcs screws on the Heatsink.
3. Turn to bottom side and remove the 2 pcs screws.
4. Install DRAM in the SO-DIMM socket.

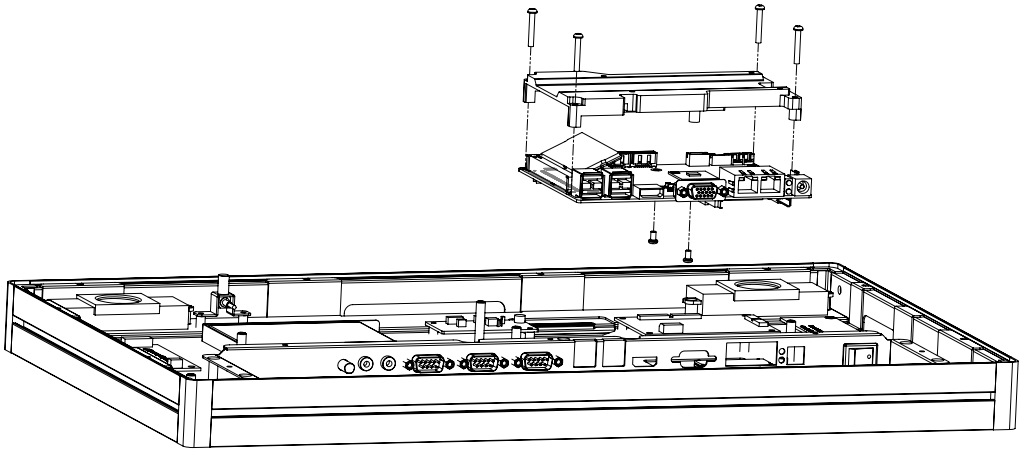
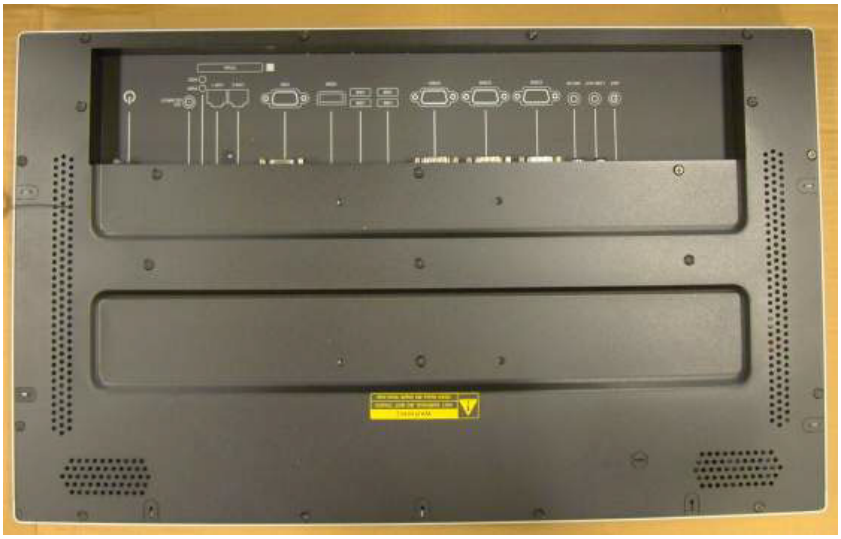


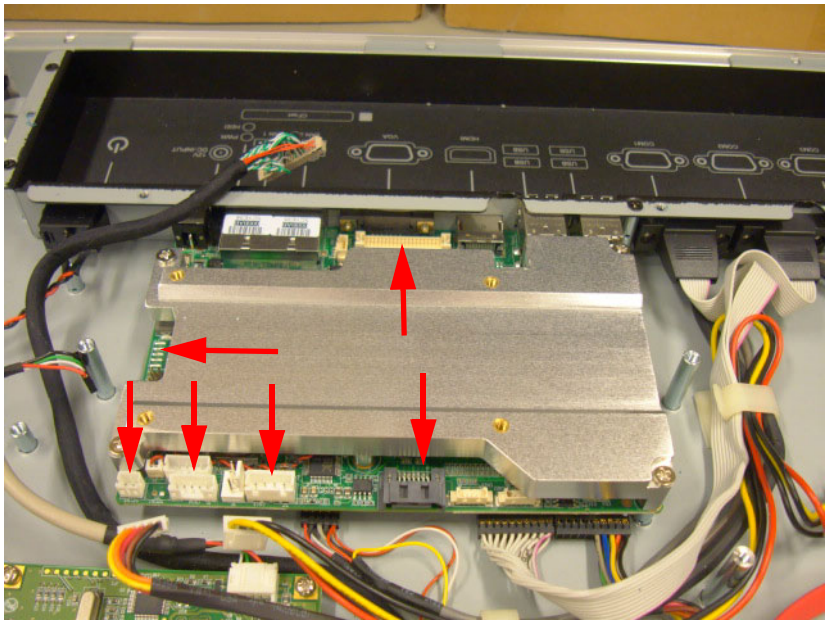
Figure 3.3 Installing the memory

3.5 Installing the Wireless LAN Card

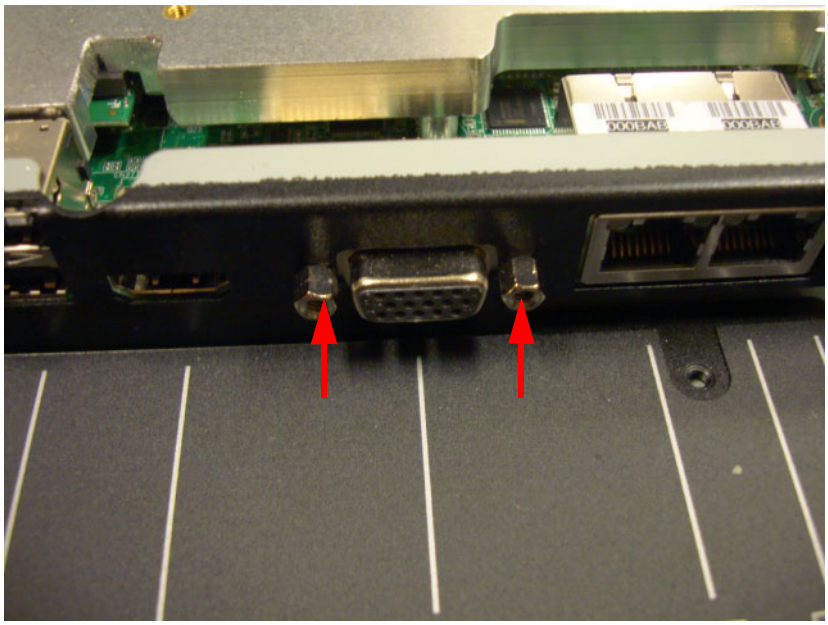
1. Remove the 21 screws on the back cover.



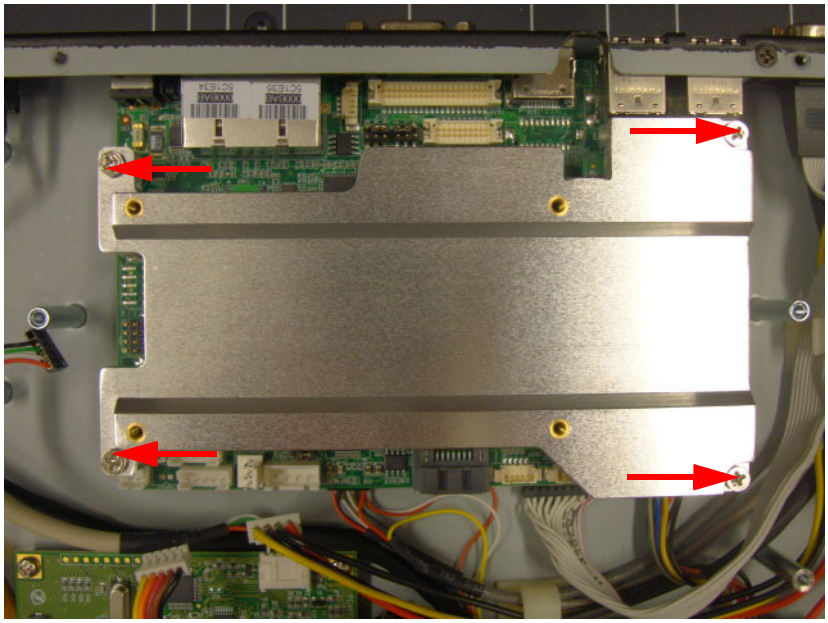
2. Remove cable connectors on the M/B top side.



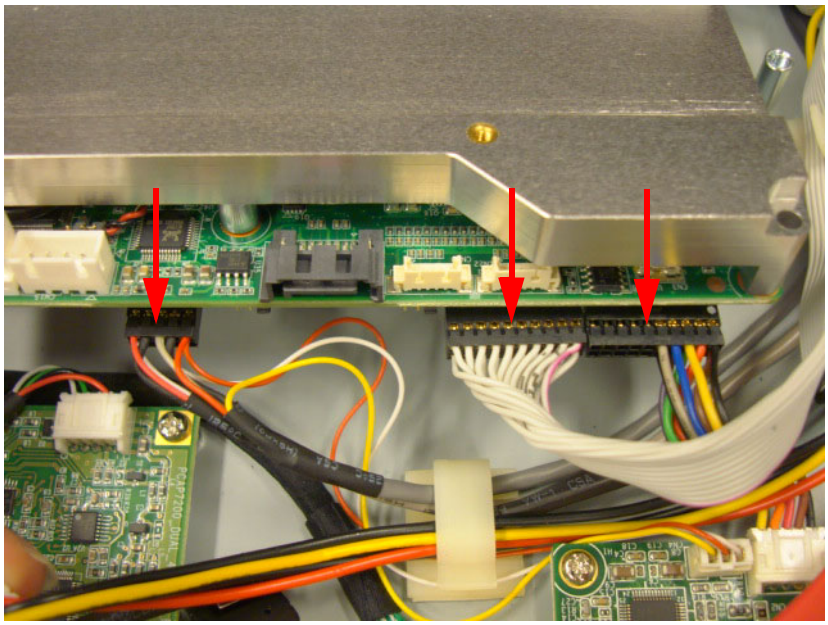
3. Remove 2 screws on the VGA connector.



Remove 4 screws on the M/B heatsink.

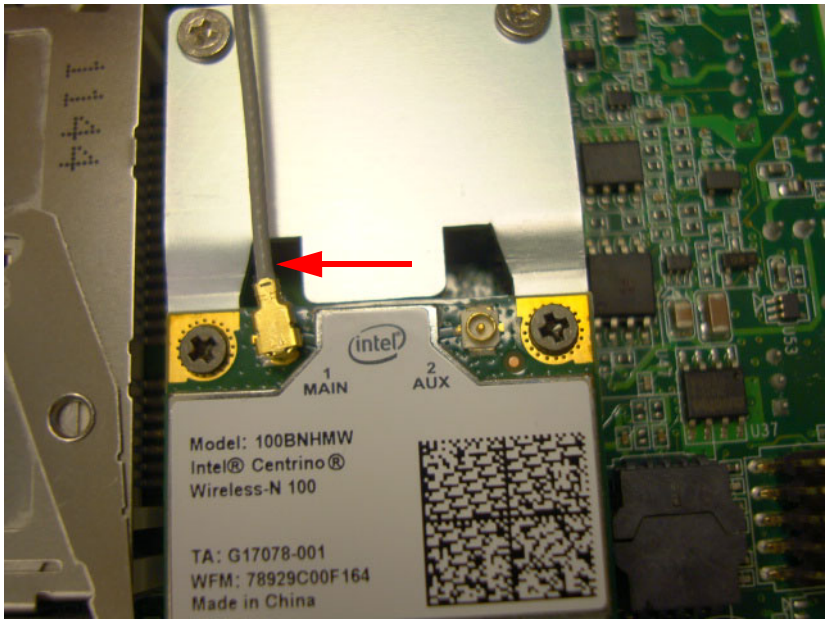


4. Remove cable connectors on the M/B bottom side.



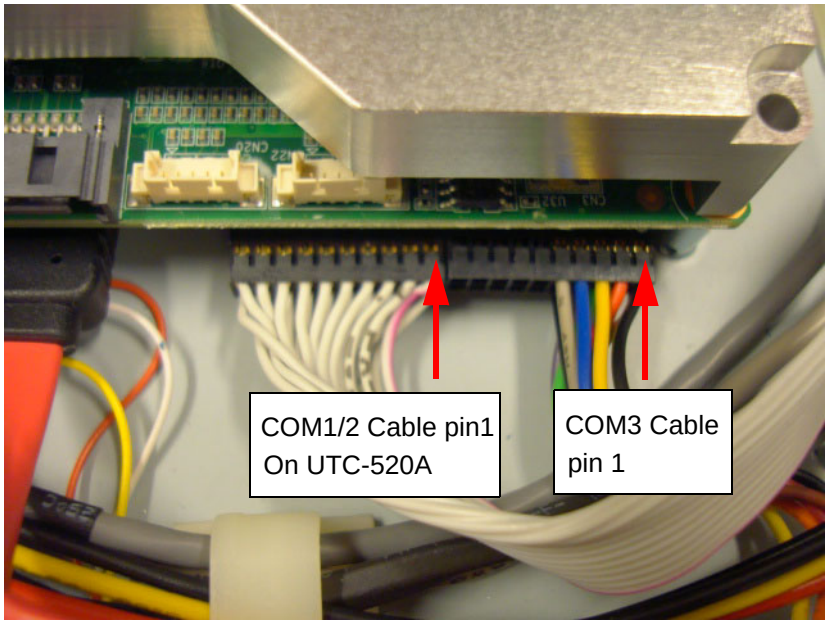
5. Install the WLAN card on mini PCI-e slot (M/B bottom side).

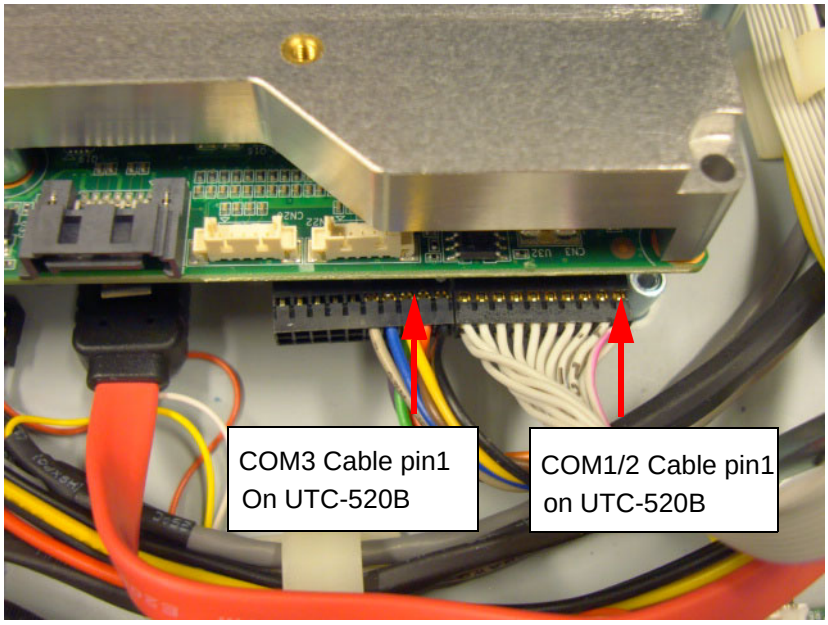
Connect the coaxial cable to **ANT1** on the WLAN card



6. Put the M/B back and reassemble the cables on M/B bottom side.

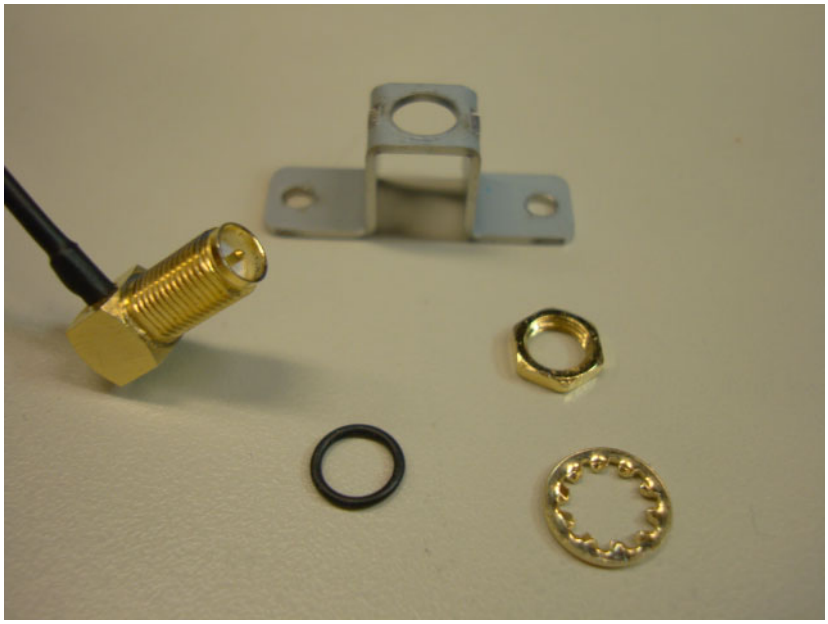
UTC-520A



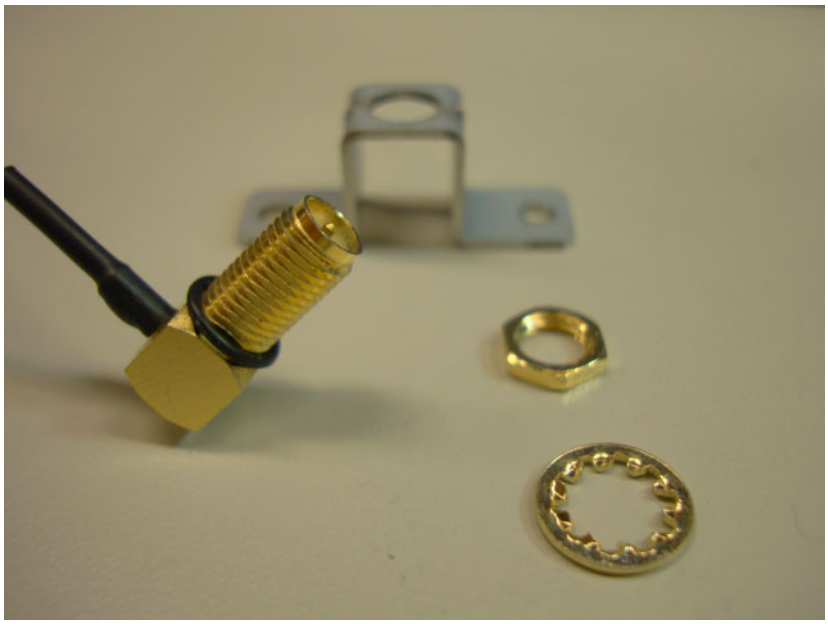


7. Reassemble the cables on the M/B top side.
   Reassemble the 4 screws on the M/B heatsink.
   Reassemble the 2 screws on the VGA connector.

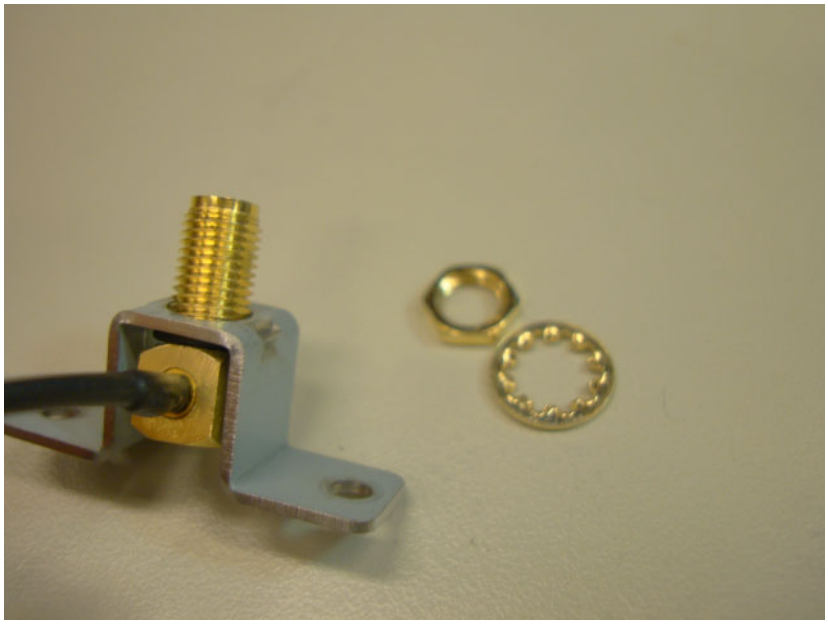
8. Coaxial cable & bracket.



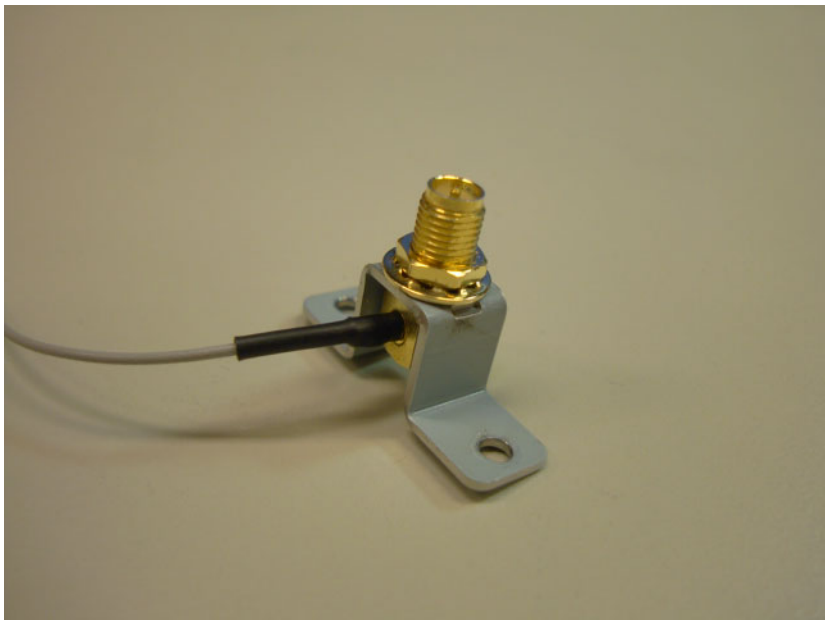
Put the black rubber gasket onto the SMA side first



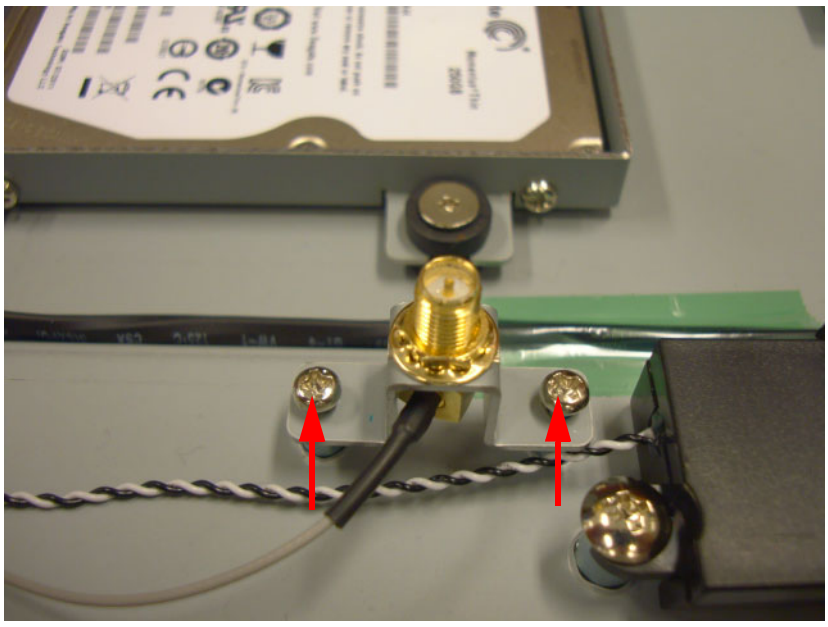
Put the bracket on the SMA connector



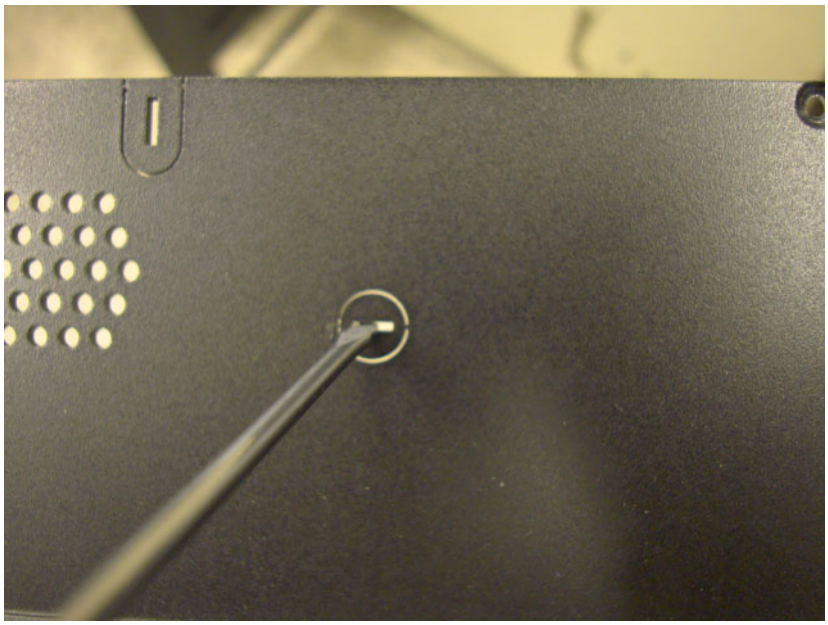
Install the washer & nut and screw tight.



9. Put the antenna bracket on the stand and reassemble the 2 screws



10. Remove the back "Hole Cover" with a slot screwdriver.



11. Reassemble the 21 screws on the back cover.

12. Install the antenna on the SMA connector

Chapter 4

Jumper Settings and Connectors

This chapter tells how to set up the UTC-520A/B/C hardware, including instructions on setting jumpers and connecting peripherals, switches and indicators. Be sure to read all the safety precautions before you begin the installation procedures.

Sections include:

- Jumpers and Connectors
- CMOS Clear for External RTC (J5)
- COM Port Interface
- VGA Interface
- Watchdog Timer Configuration

4.1 Jumpers and Connectors (UTC-520A)

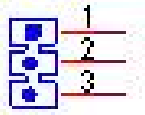
4.1.1 Jumpers

4.1.1.1 Jumper List

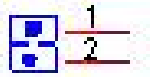
J1	Clear CMOS
J2	Auto Power On Setting
J3	LCD Power
J5	COM2 Setting

4.1.1.2 Jumper Settings

J1	**Clear CMOS**
Part Number	1653003101
Footprint	HD_3x1P_79_D
Description	PIN HEADER 3x1P 2.0mm 180D(M) DIP 2000-13 WS
Setting	Function
(1-2)*	Normal
(2-3)	Clear COMS

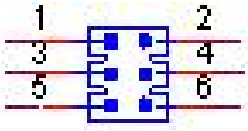


J2	**Auto Power On Setting**
Part Number	1653002101
Footprint	HD_2x1P_79_D
Description	PIN HEADER 2*1P 180D(M)SQUARE 2.0mm DIP W/O Pb
Setting	Function
NC*	Power Button for Power On
(1-2)	Auto Power On

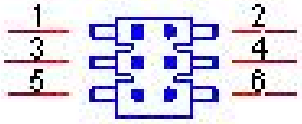


J3	**LCD Power**
Part Number	1653003201
Footprint	HD_3x2P_79_D
Description	PIN HEADER 3*2P 180D(M) 2.0mm DIP SQUARE WO/Pb
Setting	Function
(1-3)	+3.3V
(3-5)*	+5V

(3-4)	+12V

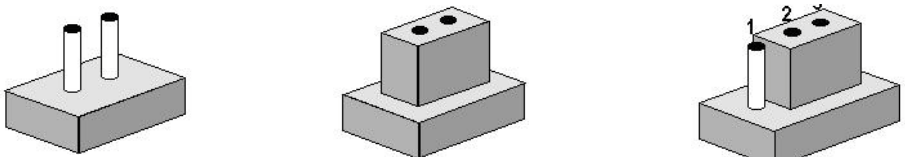


J5	**COM2 Setting**
Part Number	**1653003260**
Footprint	HD_3x2P_79
Description	PIN HEADER 3x2P 2.0mm 180D(M) SMD 21N22050
Setting	Function
(1-2)*	RS232
(3-4)	RS485
(5-6)	RS422

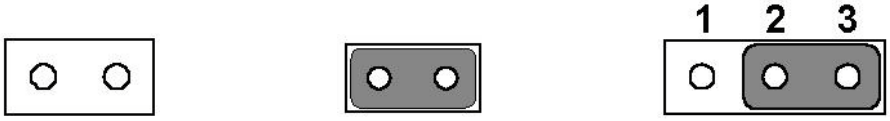


4.1.1.3 Jumper Description

Cards can be configured by setting jumpers. A jumper is a metal bridge used to close an electric circuit. It consists of two metal pins and a small metal clip (often protected by a plastic cover) that slides over the pins to connect them. To close a jumper, you connect the pins with the clip. To open a jumper, you remove the clip. Sometimes a jumper will have three pins, labeled 1, 2 and 3. In this case you would connect either pins 1 and 2, or 2 and 3.



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



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.

Warning! *To avoid damaging the computer, always turn off the power supply before setting jumpers to clear CMOS. Before turning on the power supply, set the jumper back to 3.0 V Battery On.*

4.1.2 Connectors

4.1.2.1 Connector List

Table 4.1: Connectors	
CN1	Power Switch
CN2	Inverter Power Output
CN4	SATA Power
CN6	SATA 2
CN7	RS422/485
CN8	GPIO
CN10	DDR3 SODIMM Socket
CN12	Internal USB
CN13	SMBus
CN14	RJ45 Ethernet x 2
CN17	48 bits LVDS Panel
CN18	External USB (1/2)
CN19	External USB (3/4)
CN20	HDMI
CN22	12V Power Input
CN23	VGA
CN24	Audio
CN25	COM1/COM2
CN26	COM3/COM4
CN28	MIOe
CN29	PCIE Mini Card Holder
CN30	PCIE Mini Card
CN31	CFast

4.1.3 Mechanical

4.1.3.1 Jumper and Connector Location

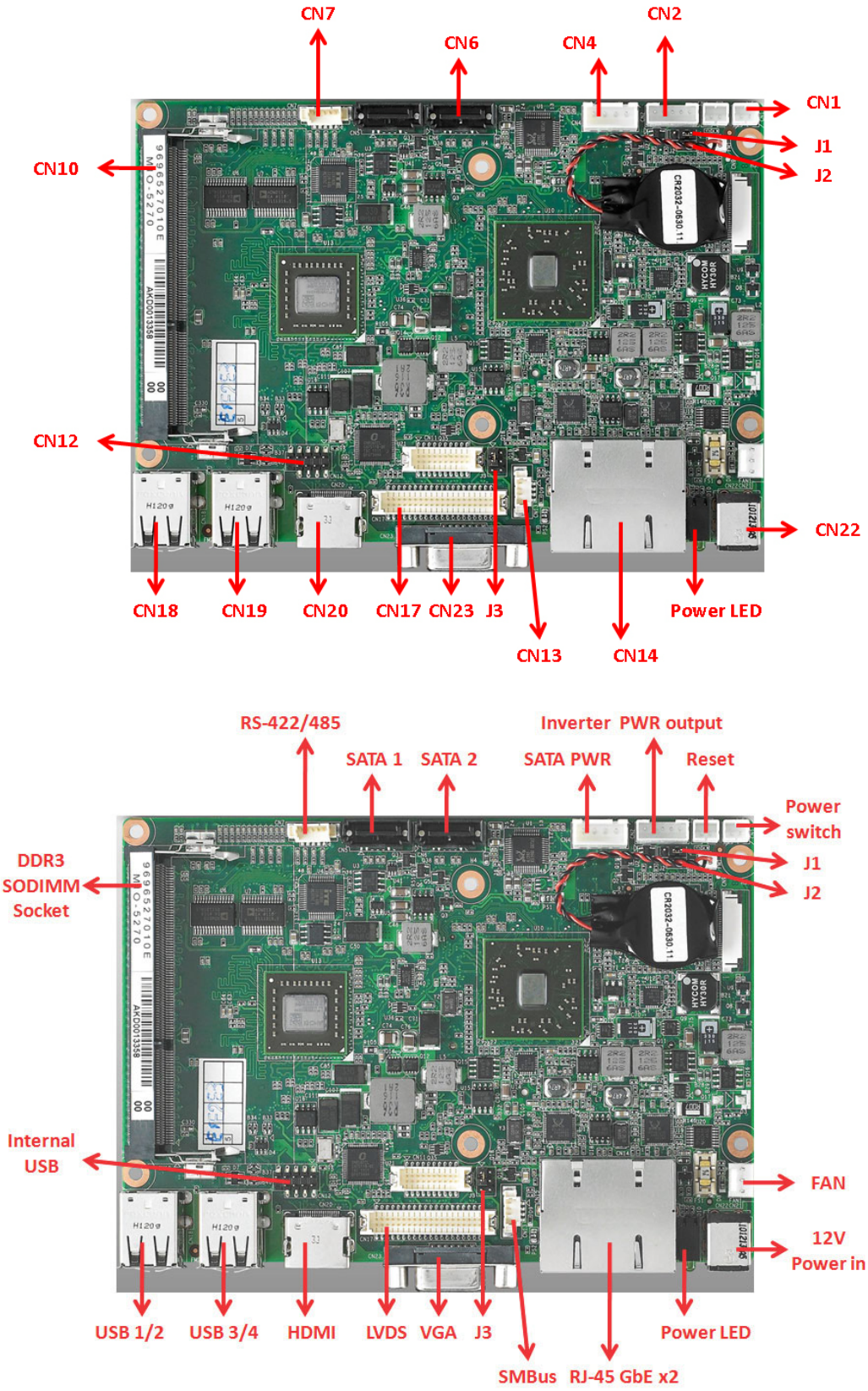


Figure 4.1 Jumper and Connector Layout (Component Side)

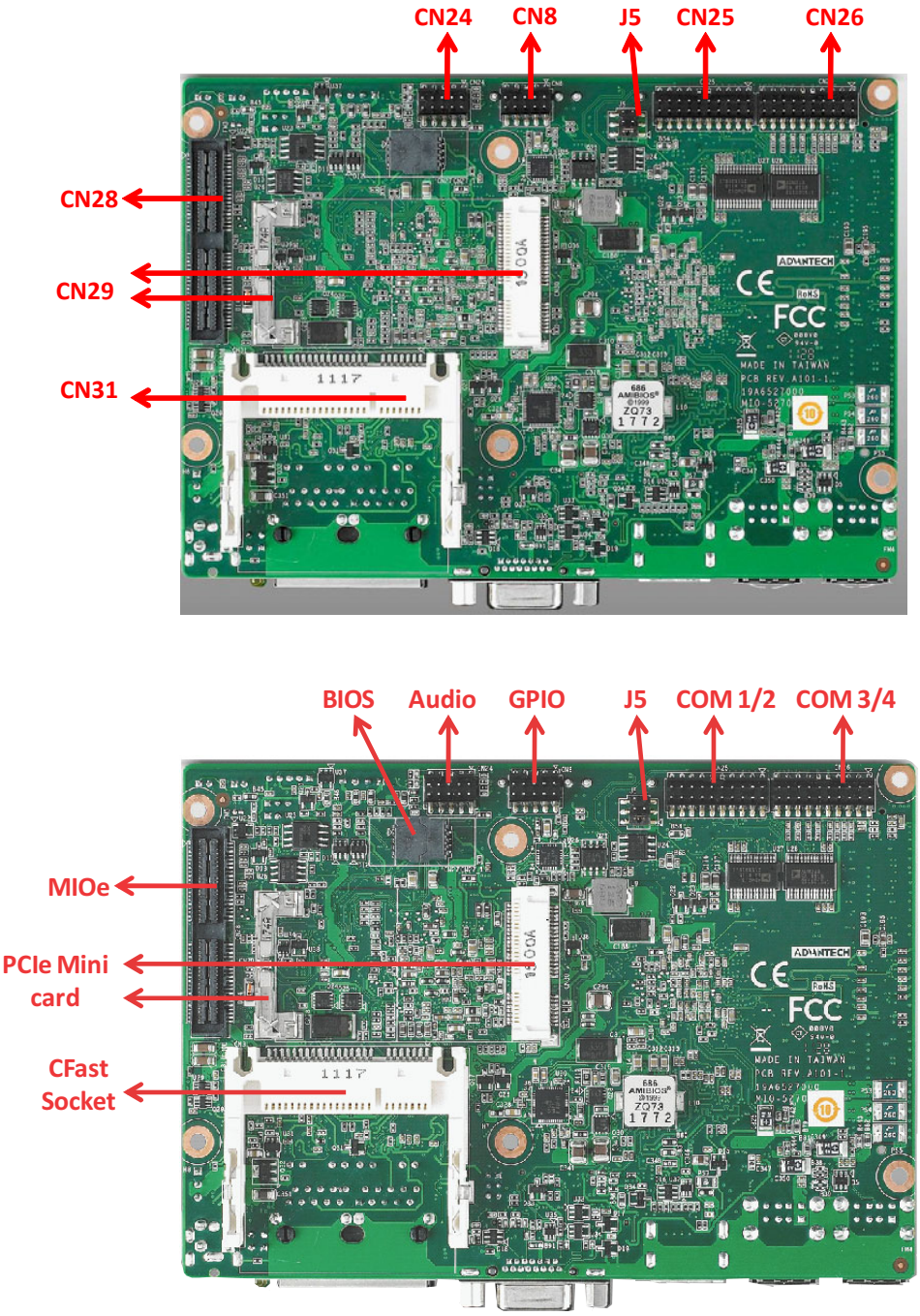


Figure 4.2 Jumper and Connector Layout (Solder Side)

4.2 Jumpers and Connectors (UTC-520B)

4.2.1 Jumpers

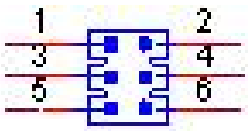
4.2.1.1 Jumper List

Table 4.2: Jumpers

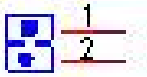
Label	Function
J2	48-bit LVDS2 Power
J3	Auto Power on setting
J4	COM2 Setting
J6	Clear CMOS

4.2.1.2 Jumper Settings

J2	**48 bits LVDS2 Power**
Part Number	1653003260
Footprint	HD_3x2P_79
Description	PIN HEADER 3x2P 2.0mm 180D(M) SMD 21N22050
Setting	Function
(1-3)	+3.3V
(3-5)*	+5V
(3-4)	+12V

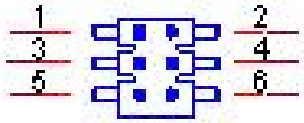


J3	**Auto Power On Setting**
Part Number	1653002101
Footprint	HD_2x1P_79_D
Description	PIN HEADER 2*1P 180D(M)SQUARE 2.0mm DIP W/O Pb
Setting	Function
NC*	Power Button for Power On
(1-2)	Auto Power On

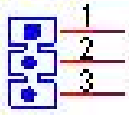


J4	**COM2 Setting**
Part Number	1653003260
Footprint	HD_3x2P_79
Description	PIN HEADER 3x2P 2.0mm 180D(M) SMD 21N22050
Setting	Function

(1-2)*	RS232
(3-4)	RS485
(5-6)	RS422

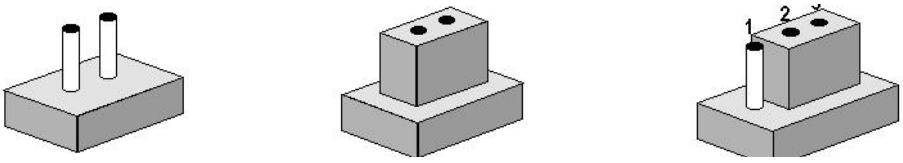


J6	**Clear CMOS**
Part Number	1653003101
Footprint	HD_3x1P_79_D
Description	PIN HEADER 3x1P 2.0mm 180D(M) DIP 2000-13 WS
Setting	Function
(1-2)*	Normal
(2-3)	Clear COMS

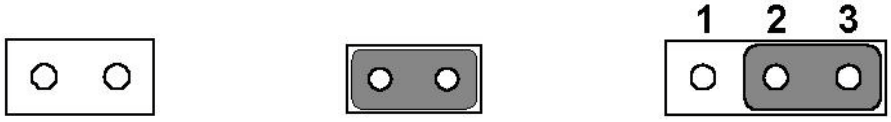


4.2.1.3 Jumper Description

Cards can be configured by setting jumpers. A jumper is a metal bridge used to close an electric circuit. It consists of two metal pins and a small metal clip (often protected by a plastic cover) that slides over the pins to connect them. To close a jumper, you connect the pins with the clip. To open a jumper, you remove the clip. Sometimes a jumper will have three pins, labeled 1, 2 and 3. In this case you would connect either pins 1 and 2, or 2 and 3.



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



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.

Warning! *To avoid damaging the computer, always turn off the power supply before setting jumpers to clear CMOS. Before turning on the power supply, set the jumper back to 3.0 V Battery On.*

4.2.2 Connectors

4.2.2.1 Connector List

Table 4.3: Connectors

Label	Function
CN2	DC JACK
CN3	DDR3 SO-DIMM
CN5	Power Switch
CN9	GPIO
CN10	VGA
CN11	CFast
CN12	SIM Holder
CN13	Full-size Mini PCIe
CN14	SATA
CN15	SATA Power
CN16	USB 3/4
CN17	Internal USB
CN18	USB 1/2
CN19	COM1/COM2 RS-232
CN20	RS422/485 1
CN22	RS422/485 2
CN24	COM3/COM4 RS-232
CN25	SMBus
CN28	LAN
CN30	Audio
CN34	LVDS2 Inverter Power
CN35	48 bits LVDS2 Panel
CN36	HDMI
CN38	LVDS1 Inverter Power

4.2.3 Mechanical

4.2.3.1 Jumper and Connector Location

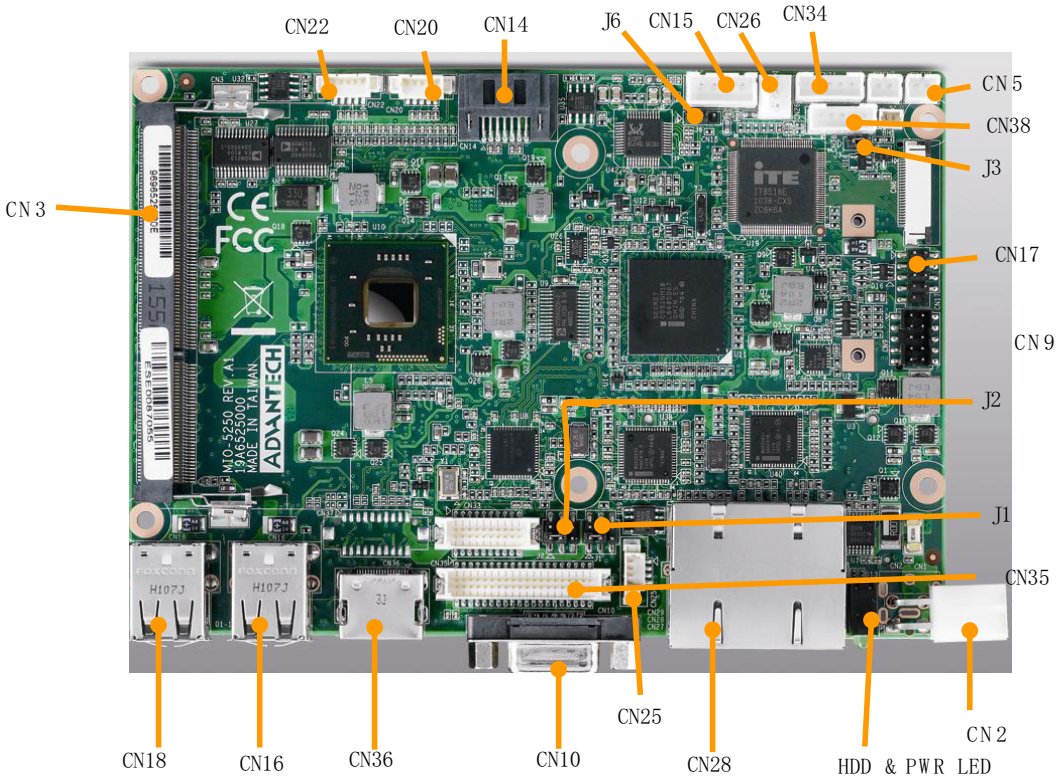


Figure 4.3 Jumper and Connector Layout (Component Side)

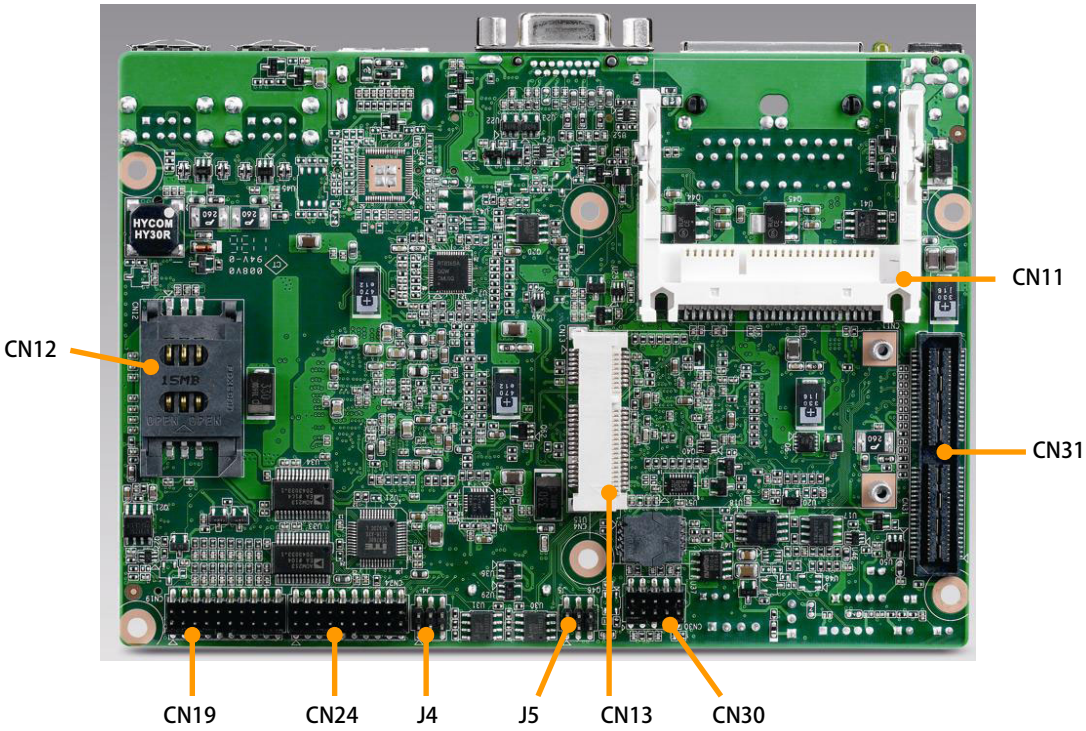


Figure 4.4 Jumper and Connector Layout (Solder Side)

4.3 Jumpers and Connectors (UTC-520C)

4.3.1 Jumpers

The UTC-520C has a number of jumpers that allow you to configure your system to suit your application. The table below lists the functions of the various jumpers.

Table 4.4: Jumpers	
J1	Clear CMOS
J2	Auto Power On Setting
J3	LCD Power
J4	DDR3L Select
J5	COM2 Setting

4.3.2 Connectors

Onboard connectors link the UTC-520C to external devices such as hard disk drives, a keyboard, or floppy drives. The table below lists the function of each of the board's connectors.

Table 4.5: Connectors	
Label	**Function**
CN1	Power Switch
CN2	Reset
CN3	Inverter Power Output
CN4	SMBus
CN5	RS422/485
CN6	SATA Power
CN7	SATA2
CN8	SATA1
CN9	Audio
CN12	SODIMM-DDR3
CN13	Internal USB
CN14	48 bits LVDS Panel
CN15	LAN
CN18	12V Power Input
CN19	External USB2.0+USB3.0
CN20	External USB2.0+USB3.0
CN21	HDMI+DISPLAY
CN22	DC Jack
CN23	VGA
CN24	COM1/COM2
CN25	GPIO
CN26	BIOS Socket
CN27	MIOe
CN28	Mini PCIE/mSATA
CN29	Mini PCIE
FAN1	CPU FAN
FAN2	System FAN

4.3.3 Locating connectors & block diagram

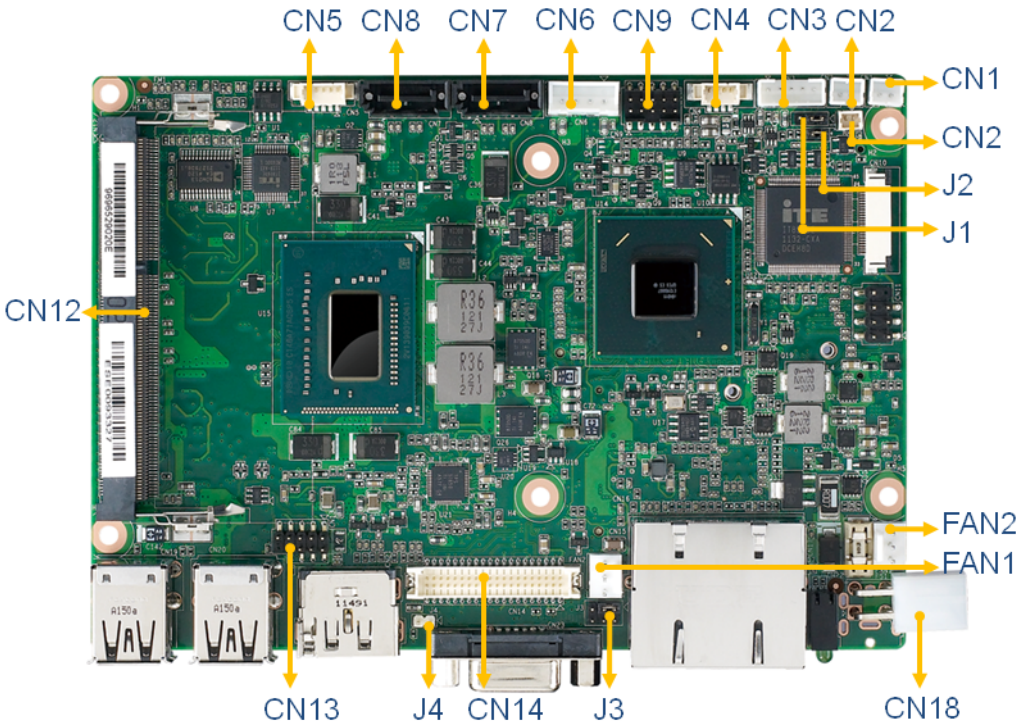


Figure 4.5 UTC-520CL Connector Locations (Top Side)

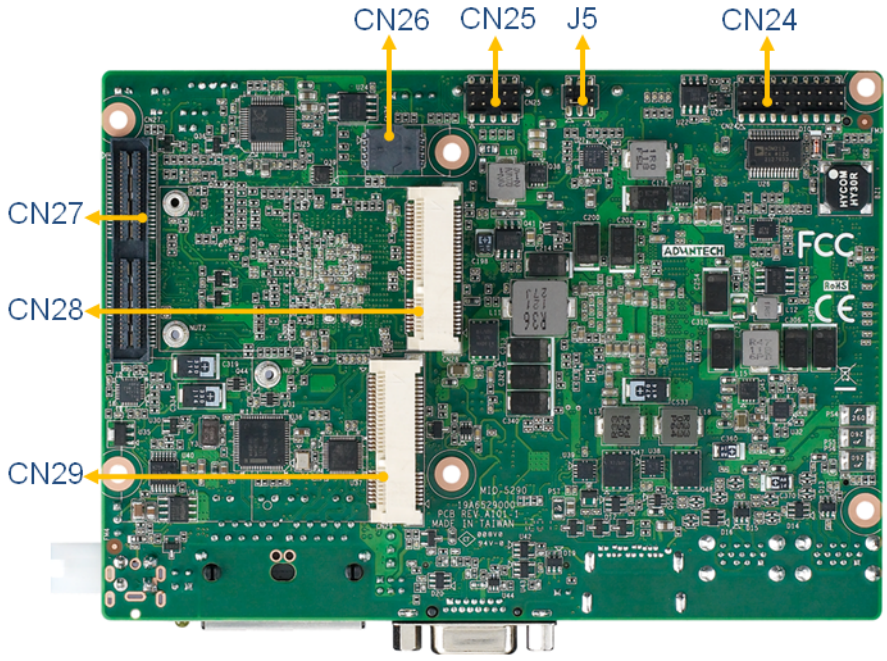


Figure 4.6 UTC-520C Connector Locations (Bottom Side)

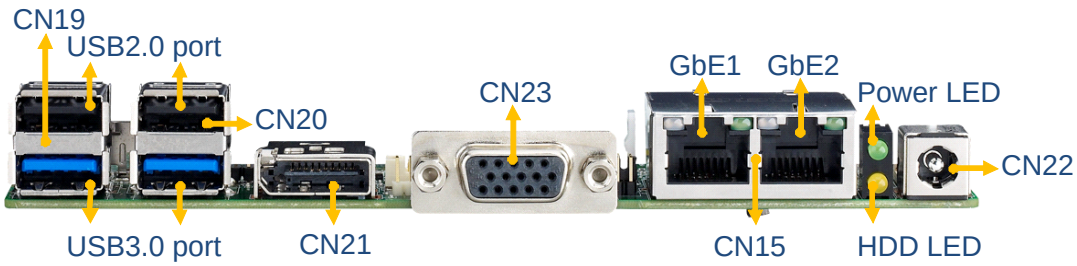
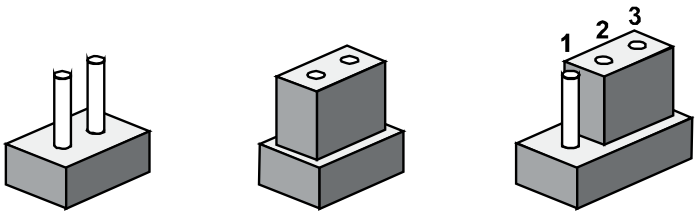


Figure 4.7 UTC-520CU Connector Locations (Coastline)

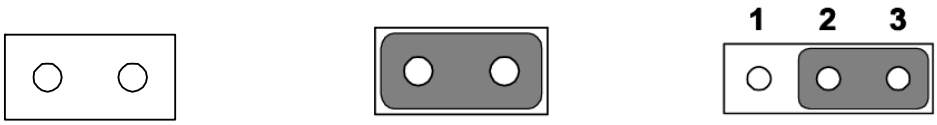
4.3.4 Setting Jumpers

You may configure your card to match the needs of your application by setting jumpers. A jumper is a metal bridge used to close an electric circuit. It consists of two metal pins and a small metal clip (often protected by a plastic cover) that slides over the pins to connect them. To “close” a jumper, you connect the pins with the clip. To “open” a jumper, you remove the clip. Sometimes a jumper will have three pins, labeled 1, 2 and 3. In this case you would connect either pins 1 and 2, or 2 and 3.



open **closed** **closed 2-3**

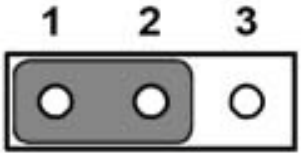
The jumper settings are schematically depicted in this manual as follows:



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

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

4.3.4.1 Clear CMOS (J1)



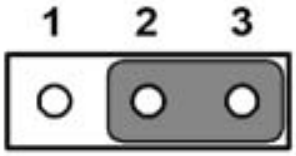
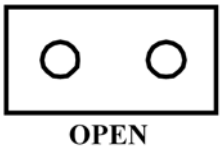


Table 4.6: Clear CMOS (JP1)

Setting	Function
(1-2)*	Normal (default)
(2-3)	Clear CMOS

4.3.4.2 Auto Power On Setting (J2)



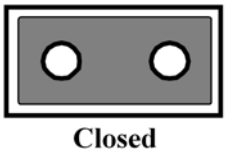
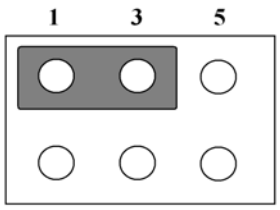
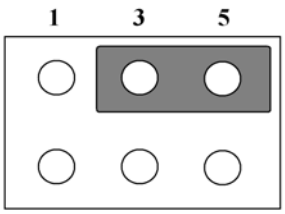


Table 4.7: Auto Power On Setting (J2)

Setting	Function
NC	Power Button for Power On
(1-2)*	Auto Power On (default)

4.3.4.3 LCD Power (J3)





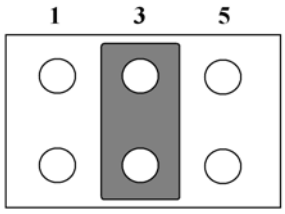
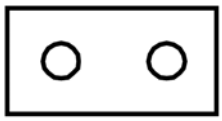


Table 4.8: LCD Power (J3)

Setting	Function
(1-3)*	+3.3V (default)
(3-5)	+5V
(3-4)	+12V

4.3.4.4 LVDS Panel Power Select (J4)



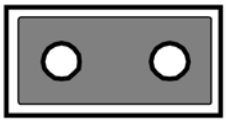
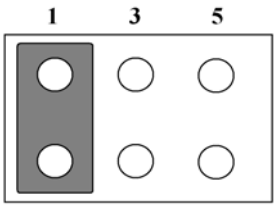
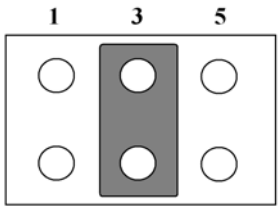


Table 4.9: LVDS Panel Power Select (J4)

Setting	Function
(Open)*	1.5V for Std. DDR3 (default)
Close	1.35V for DDR3L

4.3.4.5 COM2 Setting (J5)





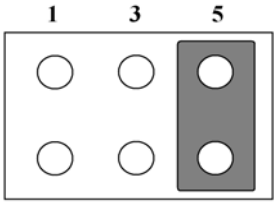


Table 4.10: COM2 Setting (J5)

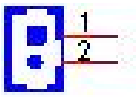
Setting	Function
(1-2)*	RS232 (default)
(3-4)	RS485
(5-6)	RS422

Appendix A

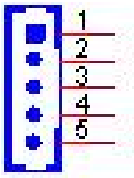
Pin Assignments

A.1 Pin Assignments (UTC-520A)

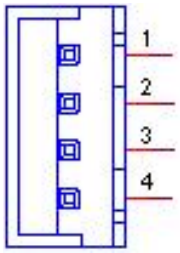
CN1	Power Switch
Part Number	1655302020
Footprint	WF_2P_79_BOX_R1_D
Description	WAFER BOX 2P 2.0mm 180D(M) DIP A2001WV2-2P
Pin	Pin Name
1	PSIN
2	GND



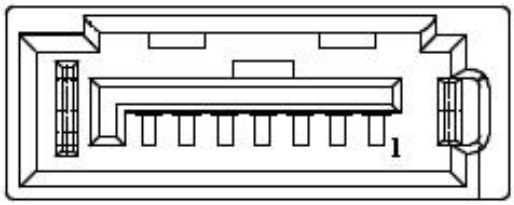
CN2	Inverter Power Output
Part Number	1655000453
Footprint	WHL5V-2M-24W1140
Description	WAFER BOX 2.0mm 5P 180D(M) DIP WO/Pb JIH VEI
Pin	Pin Name
1	+12V
2	GND
3	ENABKL
4	VBR
5	+5V



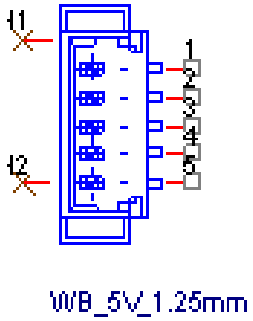
CN4	SATA Power
Part Number	1655001154
Footprint	WF_4P_98_BOX_R1_D
Description	WAFER BOX 4P 2.50mm 180D(M) DIP 24W1170-04S10-01
Pin	Pin Name
1	+5V
2	GND
3	GND
4	+12V



CN6	SATA 2
Part Number	1654007578
Footprint	SATA_7P_WATF-07DBN6SB1U
Description	Serial ATA 7P 1.27mm 180D(M) SMD WATF-07DBN6SB1U
Pin	Pin Name
1	GND
2	TX+
3	TX-
4	GND
5	RX-
6	RX+
7	GND

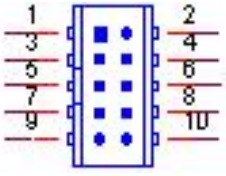


CN7	RS422/485
Part Number	1655304032
Footprint	WF_5P_49_BOX_85205
Description	WAFER 5P 1.25mm 180D(M) SMD 85205-05701
Pin	Pin Name
1	422RX-
2	422RX+
3	422/485TX+
4	422/485TX-
5	GND

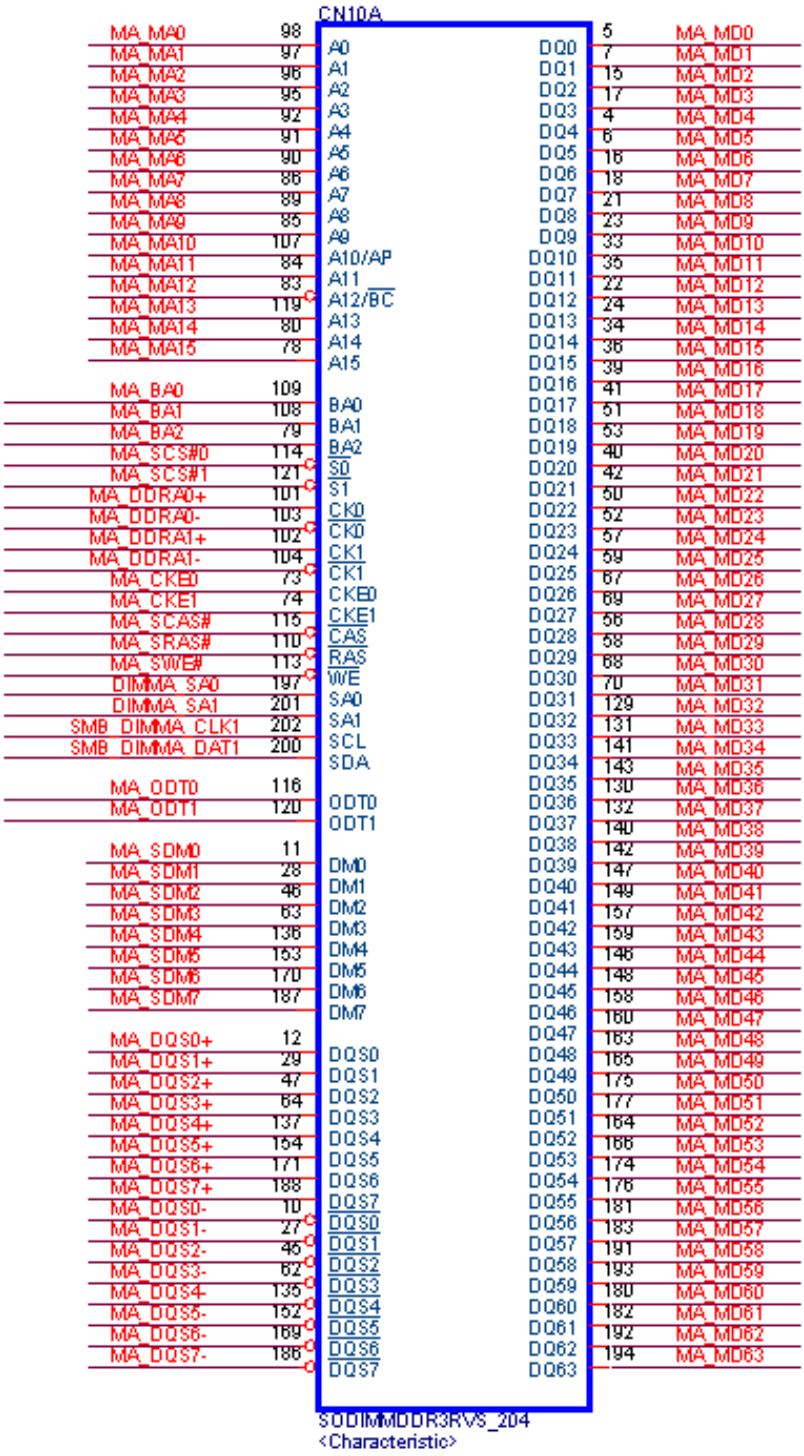


WB_5V_1.25mm

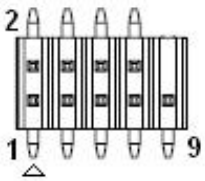
CN8	GPIO
Part Number	1653004099
Footprint	HD_5x2P_79_23N685B-10M10
Description	BOX HEADER 5x2P 2.00mm 180D(M) SMD 23N685B-10M10
Pin	Pin Name
1	+5V
2	GPIO4
3	GPIO0
4	GPIO5
5	GPIO1
6	GPIO6
7	GPIO2
8	GPIO7
9	GPIO3
10	GND



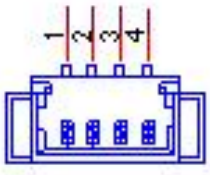
CN10	DDR3 SODIMM Socket
Part Number	1651001648
Footprint	DDR3_204P_2-2013311-1
Description	DDR3 SODIMM H=9.2mm 204P SMD 2-2013311-1
Pin	Pin Name



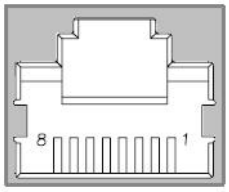
CN12	Internal USB
Part Number	1653005260
Footprint	HD_5x2P_79_N10
Description	PIN HEADER 2x5P 2.0mm 180D(M) SMD 21N22050
Pin	Pin Name
1	+5V
2	+5V
3	A_D-
4	B_D-
5	A_D+
6	B_D+
7	GND
8	GND
9	GND



CN13	SMBus
Part Number	1655904020
Footprint	FPC4V-125M
Description	WAFER 4P 1.25mm 180D(M) SMD 85205-04001
Pin	Pin Name
1	GND
2	SMB_DAT
3	SMB_CLK
4	+5V

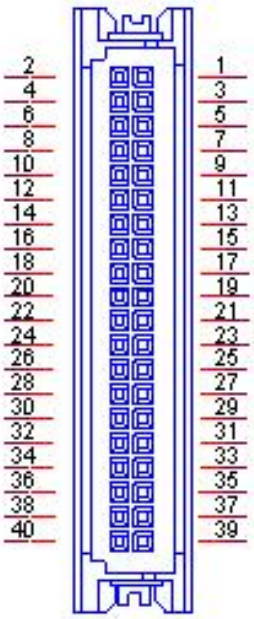


CN14	LAN
Part Number	1652003274
Footprint	RJ45_28P_RTB-19GB9J1A
Description	PHONE JACK RJ45 28P DIP RTB-19GB9J1A
Pin	Pin Name
1	TX+(10/100),BI_DA+(GHz)
2	TX-(10/100),BI_DA-(GHz)
3	RX+(10/100),BI_DB+(GHz)
4	BI_DC+(GHz)
5	BI_DC-(GHz)
6	RX-(10/100),BI_DB-(GHz)
7	BI_DD+(GHz)
8	BI_DD-(GHz)

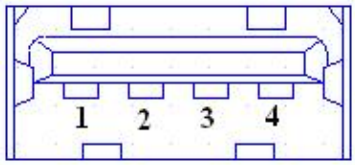


CN17	48 bits LVDS Panel
Part Number	1653920200
Footprint	SPH20X2
Description	B/B Conn. 40P 1.25mm 90D SMD DF13-40DP-1.25V
Pin	Pin Name
1	+3.3V, +5V or +12V
2	+3.3V, +5V or +12V
3	GND
4	GND
5	+3.3V, +5V or +12V
6	+3.3V, +5V or +12V
7	LVDS0_D0-
8	LVDS1_D0-
9	LVDS0_D0+
10	LVDS1_D0+
11	GND
12	GND
13	LVDS0_D1-
14	LVDS1_D1-
15	LVDS0_D1+
16	LVDS1_D1+
17	GND
18	GND
19	LVDS0_D2-

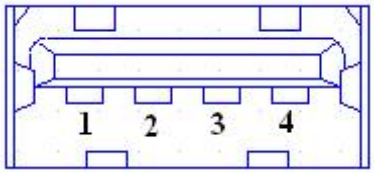
20	LVDS1_D2-
21	LVDS0_D2+
22	LVDS1_D2+
23	GND
24	GND
25	LVDS0_CLK-
26	LVDS1_CLK-
27	LVDS0_CLK+
28	LVDS1_CLK+
29	GND
30	GND
31	NC
32	NC
33	GND
34	GND
35	LVDS0_D3-
36	LVDS1_D3-
37	LVDS0_D3+
38	LVDS1_D3+
39	NC
40	NC



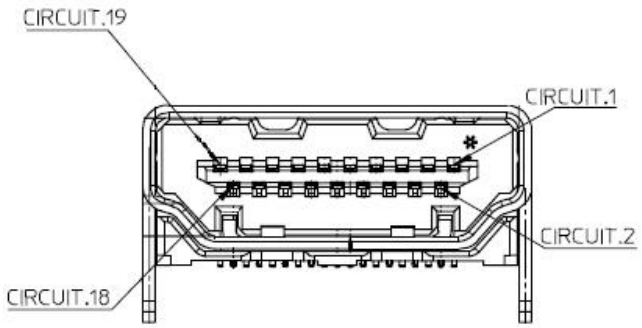
CN18	External USB
Part Number	1654009513
Footprint	USB_8P_UB1112C-8FDE-4F
Description	
Pin	Pin Name
1	+5V
2	D-
3	D+
4	GND



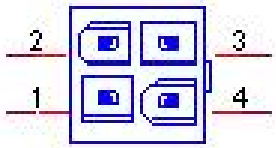
CN19	External USB
Part Number	1654009513
Footprint	USB_8P_UB1112C-8FDE-4F
Description	
Pin	Pin Name
1	+5V
2	D-
3	D+
4	GND



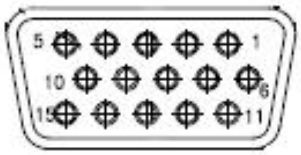
CN20	HDMI
Part Number	1654009225
Footprint	HDMI_19P_QJ51193-FFD4-7F
Description	HDMI Conn 19P 0.5mm 90D(M) SMD QJ51193-FFB4-7F
Pin	Pin Name
1	TMDS Data2+
2	TMDS Data2 Shield
3	TMDS Data2®C
4	TMDS Data1+
5	TMDS Data1 Shield
6	TMDS Data1®C
7	TMDS Data0+
8	TMDS Data0 Shield
9	TMDS Data0®C
10	TMDS Clock+
11	TMDS Clock Shield
12	TMDS Clock®C
13	Reserved
14	Reserved
15	SCL
16	SDA
17	DDC Ground
18	+5V Power
19	Hot Plug Detect



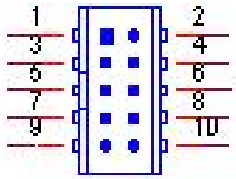
CN22	12V Power Input
Part Number	1655404090
Footprint	WF_2x2P_165_BOX_RA_D_740SP
Description	ATX PWR CONN. 2x2P 4.2mm 180D(M) DIP 24W4310-04S
Pin	Pin Name
1	GND
2	GND
3	+12V
4	+12V



CN23	VGA
Part Number	1654000055
Footprint	DBVGA-VF5MS
Description	D-SUB Conn. 15P 90D(F) DIP 070242FR015S200ZU
Pin	Pin Name
1	RED
2	GREEN
3	BLUE
4	NC
5	GND
6	GND
7	GND
8	GND
9	NC
10	GND
11	NC
12	DDAT
13	HSYNC
14	VSYNC
15	DCLK

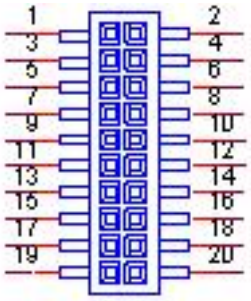


CN24	Audio
Part Number	1653004099
Footprint	HD_5x2P_79_23N685B-10M10
Description	BOX HEADER 5x2P 2.00mm 180D(M) SMD 23N685B-10M10
Pin	Pin Name
1	LOUTR
2	LINR
3	GND
4	GND
5	LOUTL
6	LINL
7	GND
8	GND
9	MIC1R
10	MIC1L

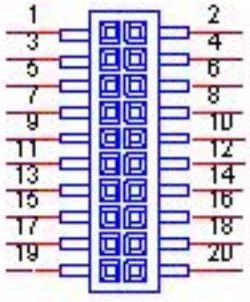


CN25	COM1/COM2
Part Number	1653004793
Footprint	HD_10x2P_79_23N685B-20M10
Description	
Pin	Pin Name
1	DCD1#
2	DSR1#
3	RXD1
4	RTS1#
5	TXD1
6	CTS1#
7	DTR1#
8	RI1#
9	GND
10	GND
11	DCD2#
12	DSR2#
13	RXD2
14	RTS2#
15	TXD2
16	CTS2#
17	DTR2#
18	RI2#

19	GND
20	GND

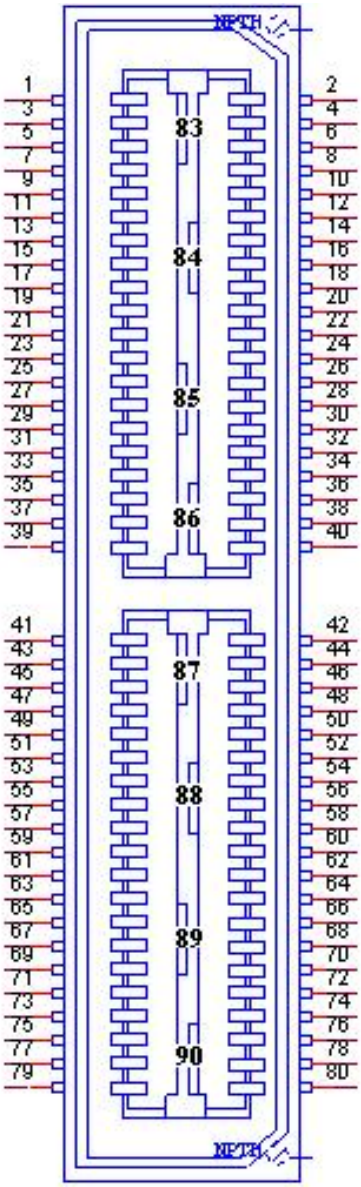


CN26	**COM3/COM4**
Part Number	1653004793
Footprint	HD_10x2P_79_23N685B-20M10
Description	
Pin	Pin Name
1	DCD3#
2	DSR3#
3	RXD3
4	RTS3#
5	TXD3
6	CTS3#
7	DTR3#
8	RI3#
9	GND
10	GND
11	DCD4#
12	DSR4#
13	RXD4
14	RTS4#
15	TXD4
16	CTS4#
17	DTR4#
18	RI4#
19	GND
20	GND



CN28	MIOe
Part Number	1654006235
Footprint	BB_40x2P_32_1625x285_2HOLD
Description	
Pin	Pin Name
1	GND
2	GND
3	PCIE_RX0+
4	PCIE_TX0+
5	PCIE_RX0-
6	PCIE_TX0-
7	GND
8	GND
9	PCIE_RX1+
10	PCIE_TX1+
11	PCIE_RX1-
12	PCIE_TX1-
13	GND
14	GND
15	PCIE_RX2+
16	PCIE_TX2+
17	PCIE_RX2-
18	PCIE_TX2-
19	GND
20	GND
21	PCIE_RX3+
22	PCIE_TX3+
23	PCIE_RX3-
24	PCIE_TX3-
25	GND
26	GND
27	PCIE_CLK+
28	LOUTL
29	PCIE_CLK-
30	LOUTR
31	GND
32	AGND
33	SMB_CLK
34	NC
35	SMB_DAT
36	NC
37	PCIE_WAKE#
38	NC
39	RESET#
40	NC
41	SLP_S3#

42	CLK33M
43	SLP_S5#
44	LPC_AD0
45	DDP_HPD
46	LPC_AD1
47	GND
48	LPC_AD2
49	DDP_AUX+
50	LPC_AD3
51	DDP_AUX-
52	LPC_DRQ#0
53	GND
54	LPC_SERIRQ
55	DDP_D0+
56	LPC_FRAME#
57	DDP_D0-
58	GND
59	GND
60	USB0_D+
61	DDP_D1+
62	USB0_D-
63	DDP_D1-
64	GND
65	GND
66	USB1_D+/USB_SSTX+
67	DDP_D2+
68	USB1_D-/USB_SSTX-
69	DDP_D2-
70	GND
71	GND
72	USB2_D+/USB_SSRX+
73	DDP_D3+
74	USB2_D-/USB_SSRX-
75	DDP_D3-
76	GND
77	GND
78	USB_OC#
79	+12VSB
80	NC
83	GND
84	GND
85	GND
86	GND
87	+5VSB
88	+5VSB
89	+5VSB
90	+5VSB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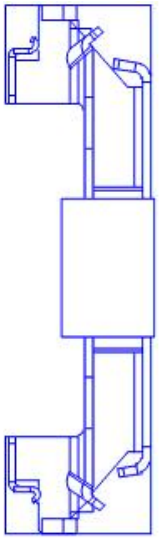
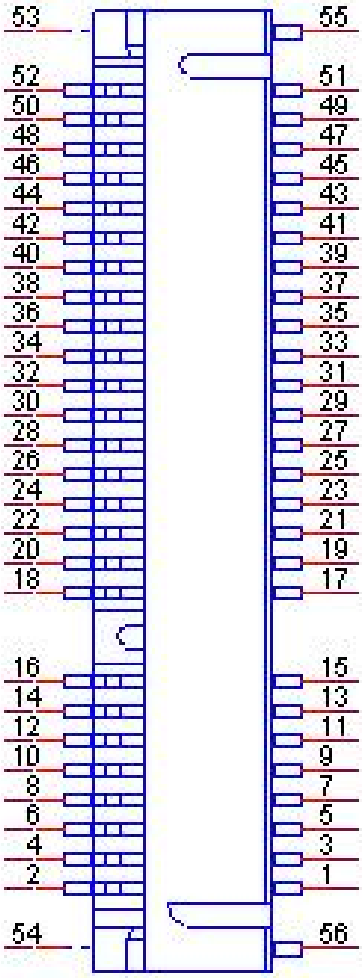
CN29	PCIe Mini Card Holder
Part Number	1654002539
Footprint	FOX_AS0B226-S68K7F_HOLDER
Description	MINI PCI Express 52P 6.8mm 90D SMD AS0B226-S68K7
Pin	Pin Name
1	GND
2	GND
3	GND
4	GND
5	NC
6	NC



CN30	PCIe Mini Card
Part Number	1654002538
Footprint	FOX_AS0B226-S68K7F
Description	MINI PCI Express 52P 6.8mm 90D SMD AS0B226-S68N7
Pin	Pin Name
1	WAKE#
2	+3.3VSB
3	NC
4	GND
5	NC
6	+1.5V
7	NC
8	NC
9	GND
10	NC
11	REFCLK-
12	NC
13	REFCLK+

14	NC
15	GND
16	NC
17	NC
18	GND
19	NC
20	NC
21	GND
22	PERST#
23	PERn0
24	+3.3VSB
25	PERp0
26	GND
27	GND
28	+1.5V
29	GND
30	SMB_CLK
31	PETn0
32	SMB_DAT
33	PETp0
34	GND
35	GND
36	USB D-
37	GND
38	USB D+
39	+3.3VSB
40	GND
41	+3.3VSB
42	NC
43	GND
44	NC
45	NC
46	NC
47	NC
48	+1.5V
49	NC
50	GND
51	NC
52	+3.3VSB
53	NC
54	NC
55	GND
56	GND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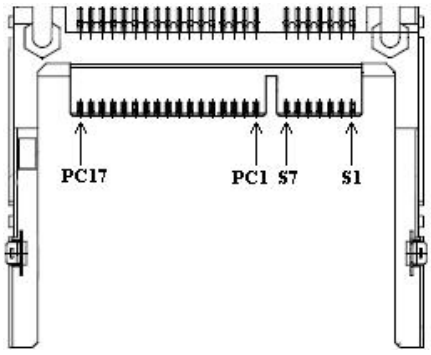
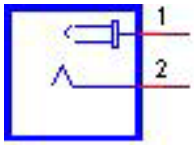
CN31	**CFast**
Part Number	1653004402
Footprint	CFAST_24P_N7E24
Description	CFast 24P 1.27mm 90D(M) SMD N7E24-M516RA-50
Pin	Pin Name
PC1	CDI
PC2	GND
PC3	NC
PC4	NC
PC5	NC
PC6	NC
PC7	GND
PC8	NC
PC9	NC
PC10	NC
PC11	NC
PC12	NC
PC13	+3.3V
PC14	+3.3V
PC15	GND
PC16	GND
PC17	CDO
S1	GND
S2	TX+
S3	TX-
S4	GND
S5	RX-
S6	RX+
S7	GND



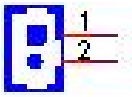
A.2 Pin Assignments (UTC-520B)

CN2	DC JACK
Part Number	1652005624
Footprint	PJ_2P_2DC-G213B200
Description	DC POWER JACK 2.5mm 90D(M) DIP 2DC-G213B200
Pin	Pin Name
1	+VIN
2	GND



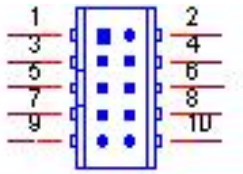
CN3	SODIMMDDR3RVS_204
Part Number	1651001648
Footprint	DDR3_204P_2-2013311-1
Description	DDR3 SODIMM H=9.2mm 204P SMD 2-2013311-1
Pin	Pin Name

CN5	**Power Switch**
Part Number	1655302020
Footprint	WF_2P_79_BOX_R1_D
Description	WAFER BOX 2P 2.0mm 180D(M) DIP A2001WV2-2P
Pin	Pin Name
1	PSIN
2	GND

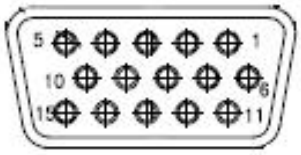


CN9	**GPIO**
Part Number	1653004099
Footprint	HD_5x2P_79_23N685B-10M10
Description	BOX HEADER 5x2P 2.00mm 180D(M) SMD 23N685B-10M10
Pin	Pin Name
1	+5V
2	GPIO4
3	GPIO0
4	GPIO5
5	GPIO1
6	GPIO6

7	GPIO2
8	GPIO7
9	GPIO3
10	GND

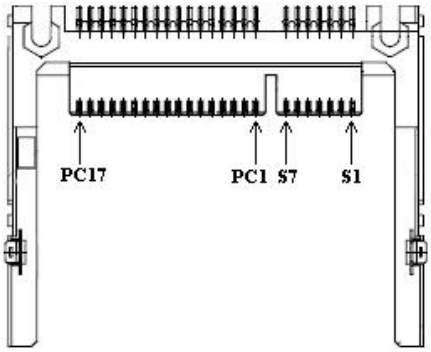


CN10	**VGA**
Part Number	1654000055
Footprint	DBVGA-VF5MS
Description	D-SUB Conn. 15P 90D(F) DIP 070242FR015S200ZU
Pin	Pin Name
1	RED
2	GREEN
3	BLUE
4	NC
5	GND
6	GND
7	GND
8	GND
9	NC
10	GND
11	NC
12	DDAT
13	HSYNC
14	VSYNC
15	DCLK

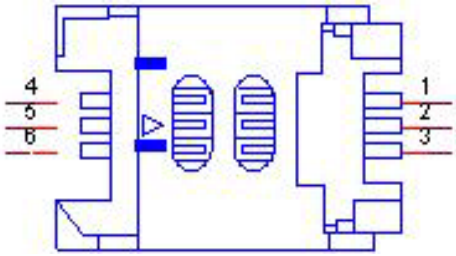


CN11	**CFast**
Part Number	1653004849
Footprint	CFAST_24P_N7G24
Description	CFast 24P 1.27mm 90D(M) SMD N7G24-A0B2RA-10-0HT-
Pin	Pin Name
PC1	CDI
PC2	GND

PC3	NC
PC4	NC
PC5	NC
PC6	NC
PC7	GND
PC8	NC
PC9	NC
PC10	NC
PC11	NC
PC12	NC
PC13	+3.3V
PC14	+3.3V
PC15	GND
PC16	GND
PC17	CDO
S1	GND
S2	TX+
S3	TX-
S4	GND
S5	RX-
S6	RX+
S7	GND

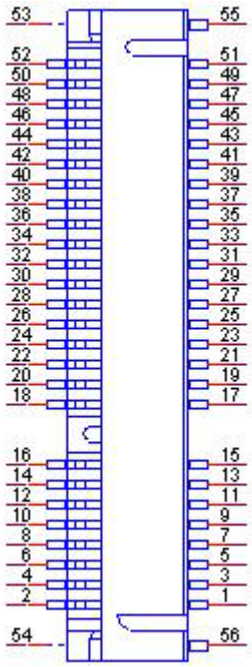


CN12	**SIM**
Part Number	1654000639
Footprint	SIM-WL608C
Description	SIM card conn 6p 90D(F)SMD WO/Pb WL608C3-M04-7F
Pin	Pin Name
1	UIM_PWR
2	UIM_RESET
3	UIM_CLK
4	GND
5	UIM_VPP
6	UIM_DATA

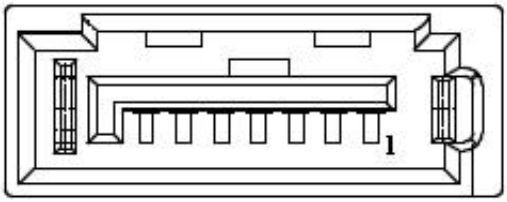


CN13	**Mini PCIE**
Part Number	1654006715
Footprint	MINIPCI_52P_88911-5204M
Description	
Pin	Pin Name
1	WAKE#
2	+3.3VSB
3	NC
4	GND
5	NC
6	+1.5V
7	NC
8	NC
9	GND
10	NC
11	REFCLK-
12	NC
13	REFCLK+
14	NC
15	GND
16	NC
17	NC
18	GND
19	NC
20	NC
21	GND
22	PERST#
23	PERn0
24	+3.3VSB
25	PERp0
26	GND
27	GND
28	+1.5V
29	GND
30	SMB_CLK
31	PETn0
32	SMB_DAT
33	PETp0
34	GND
35	GND

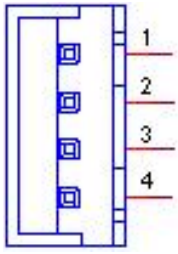
36	USB D-
37	GND
38	USB D+
39	+3.3VSB
40	GND
41	+3.3VSB
42	NC
43	GND
44	NC
45	NC
46	NC
47	NC
48	+1.5V
49	NC
50	GND
51	NC
52	+3.3VSB
H3	GND
H4	GND
H5	NC
H6	NC



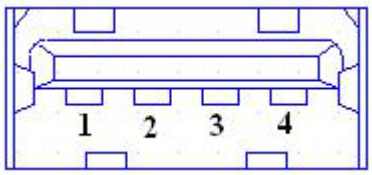
CN14	SATA
Part Number	1654004118
Footprint	SATA_7P_50_WATA-07DPLH4U
Description	Serial ATA 7P 1.27mm 90D(M) SMD WATA-07DPLH4U
Pin	Pin Name
1	GND
2	TX+
3	TX-
4	GND
5	RX-
6	RX+
7	GND



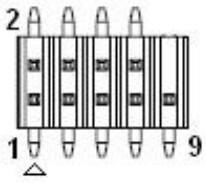
CN15	SATA Power
Part Number	1655001154
Footprint	WF_4P_98_BOX_R1_D
Description	WAFER BOX 4P 2.50mm 180D(M) DIP 24W1170-04S10-01
Pin	Pin Name
1	+5V
2	GND
3	GND
4	+12V



CN16	USB3/4
Part Number	1654009513
Footprint	USB_8P_UB1112C-8FDE-4F
Description	USB CONN. 8P 2.0mm 90D DIP UB1112C-8FDE-4F
Pin	Pin Name
1	+5V
2	D-
3	D+
4	GND

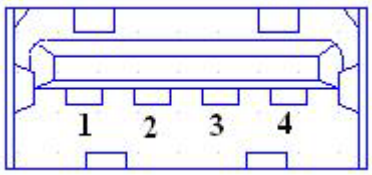


CN17	**Internal USB**
Part Number	1653005260
Footprint	HD_5x2P_79_N10
Description	PIN HEADER 2x5P 2.0mm 180D(M) SMD 21N22050
Pin	Pin Name
1	+5V
2	+5V
3	A_D-
4	B_D-
5	A_D+
6	B_D+
7	GND
8	GND
9	GND

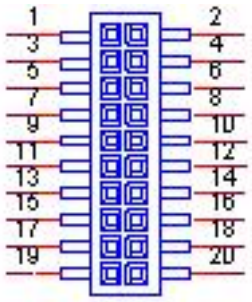


Matching Cable: 1703100260 1703100121

CN18	USB 1/2
Part Number	1654009513
Footprint	USB_8P_UB1112C-8FDE-4F
Description	USB CONN. 8P 2.0mm 90D DIP UB1112C-8FDE-4F
Pin	Pin Name
1	+5V
2	D-
3	D+
4	GND

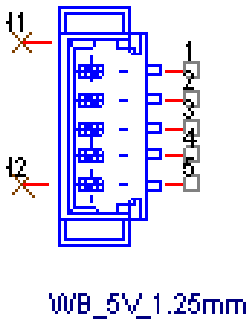


CN19	**COM1/COM2 RS-232**
Part Number	1653004793
Footprint	HD_10x2P_79_23N685B-20M10
Description	BOX HEADER 10x2P 2.0mm 180D(M)SMD 23N685B-20M10B
Pin	Pin Name
1	DCD1#
2	DSR1#
3	RXD1
4	RTS1#
5	TXD1
6	CTS1#
7	DTR1#
8	RI1#
9	GND
10	GND
11	DCD2#
12	DSR2#
13	RXD2
14	RTS2#
15	TXD2
16	CTS2#
17	DTR2#
18	RI2#
19	GND
20	GND

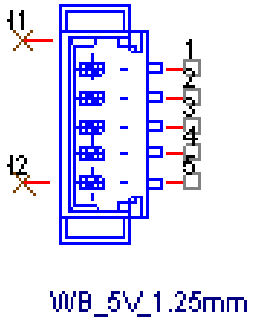


Matching Cable: 1701200220

CN20	**RS422/485 1**
Part Number	1655304032
Footprint	WF_5P_49_BOX_85205
Description	WAFER 5P 1.25mm 180D(M) SMD 85205-05701
Pin	Pin Name
1	422RX-
2	422RX+
3	422/485TX+
4	422/485TX-
5	GND

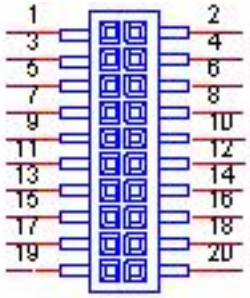


CN22	RS422/485 2
Part Number	1655304032
Footprint	WF_5P_49_BOX_85205
Description	WAFER 5P 1.25mm 180D(M) SMD 85205-05701
Pin	Pin Name
1	422RX-
2	422RX+
3	422/485TX+
4	422/485TX-
5	GND



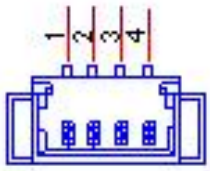
CN24	COM3/COM4 RS-232
Part Number	1653004793
Footprint	HD_10x2P_79_23N685B-20M10
Description	BOX HEADER 10x2P 2.0mm 180D(M)SMD 23N685B-20M10B
Pin	Pin Name
1	DCD3#
2	DSR3#
3	RXD3
4	RTS3#
5	TXD3
6	CTS3#
7	DTR3#
8	RI3#
9	GND
10	GND
11	DCD4#
12	DSR4#
13	RXD4
14	RTS4#
15	TXD4
16	CTS4#
17	DTR4#
18	RI4#
19	GND

20	GND

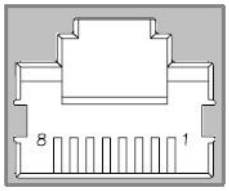


Matching Cable: 1701200220

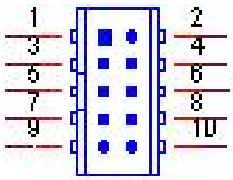
CN25	**SMBus**
Part Number	1655904020
Footprint	FPC4V-125M
Description	WAFER 4P 1.25mm 180D(M) SMD 85205-04001
Pin	Pin Name
1	GND
2	SMB_DAT
3	SMB_CLK
4	+5V



CN14	LAN
Part Number	1652003274
Footprint	RJ45_28P_RTB-19GB9J1A
Description	PHONE JACK RJ45 28P DIP RTB-19GB9J1A
Pin	Pin 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)

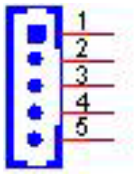


CN30	Audio
Part Number	1653004099
Footprint	HD_5x2P_79_23N685B-10M10
Description	BOX HEADER 5x2P 2.00mm 180D(M) SMD 23N685B-10M10
Pin	Pin Name
1	LOUTR
2	LINR
3	GND
4	GND
5	LOUTL
6	LINL
7	GND
8	GND
9	MIC1R
10	MIC1L



Matching Cable: 1703100152

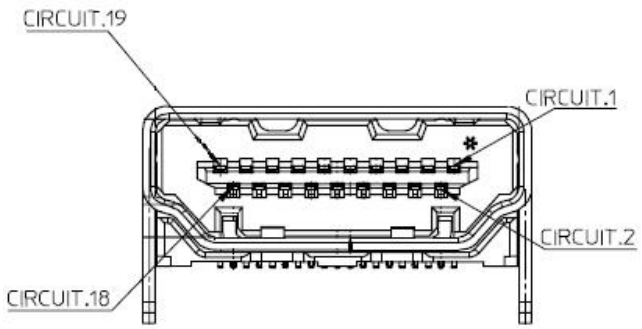
CN34	48 bits LVDS2 Inverter Power
Part Number	1655000453
Footprint	WHL5V-2M-24W1140
Description	WAFER BOX 2.0mm 5P 180D(M) DIP WO/Pb JIH VEI
Pin	Pin Name
1	+12V
2	GND
3	ENABKL
4	VBR
5	+5V



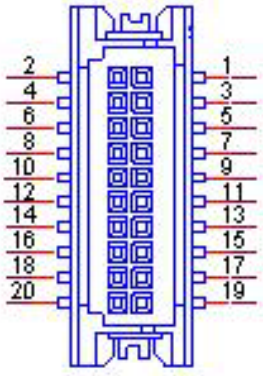
CN35	48 bits LVDS2 Panel
Part Number	1653920200
Footprint	SPH20X2
Description	B/B Conn. 40P 1.25mm 90D SMD DF13-40DP-1.25V(91)
Pin	Pin Name
1	+5V or +3.3V
2	+5V or +3.3V
3	GND
4	GND
5	+5V or +3.3V
6	+5V or +3.3V
7	LVDS0_D0-
8	LVDS1_D0-
9	LVDS0_D0+
10	LVDS1_D0+
11	GND
12	GND
13	LVDS0_D1-
14	LVDS1_D1-
15	LVDS0_D1+
16	LVDS1_D1+
17	GND
18	GND
19	LVDS0_D2-
20	LVDS1_D2-
21	LVDS0_D2+
22	LVDS1_D2+
23	GND
24	GND

25	LVDS0_CLK-
26	LVDS1_CLK-
27	LVDS0_CLK+
28	LVDS1_CLK+
29	GND
30	GND
31	NC
32	NC
33	GND
34	GND
35	LVDS0_D3-
36	LVDS1_D3-
37	LVDS0_D3+
38	LVDS1_D3+
39	NC
40	NC

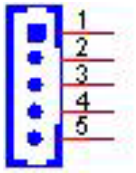
CN36	**HDMI**
Part Number	1654009225
Footprint	HDMI_19P_QJ51193-FFD4-7F
Description	HDMI Conn 19P 0.5mm 90D(M) SMD QJ51193-FFB4-7F
Pin	Pin Name
1	TMDS Data2+
2	TMDS Data2 Shield
3	TMDS Data2®C
4	TMDS Data1+
5	TMDS Data1 Shield
6	TMDS Data1®C
7	TMDS Data0+
8	TMDS Data0 Shield
9	TMDS Data0®C
10	TMDS Clock+
11	TMDS Clock Shield
12	TMDS Clock®C
13	Reserved
14	Reserved
15	SCL
16	SDA
17	DDC Ground
18	+5V Power
19	Hot Plug Detect



CN37	**eDP**
Part Number	1653910261
Footprint	SPH10X2
Description	B/B Conn 10x2P 1.25mm 180D(M)SMD DF13-20DP-1.25V
Pin	Pin Name
1	GND
2	GND
3	D0-
4	D3-
5	D0+
6	D3+
7	GND
8	NC
9	D1-
10	GND
11	D1+
12	SDAT
13	GND
14	SCLK
15	D2-
16	GND
17	D2+
18	Hot Plug Detect
19	+5V or +3.3V
20	+5V or +3.3V



CN38	24 bits LVDS1 Inverter Power
Part Number	1655000453
Footprint	WHL5V-2M-24W1140
Description	WAFER BOX 2.0mm 5P 180D(M) DIP WO/Pb JIH VEI
Pin	Pin Name
1	+12V
2	GND
3	ENABKL
4	VBR
5	+5V



A.3 Pin Assignment (UTC-520C)

J1	Clear CMOS
Part Number	1653003101
Footprint	HD_3x1P_79_D
Description	PIN HEADER 3*1P 180D(M) 2.0mm DIP SQUARE W/O Pb
Setting	Function
(1-2)*	Normal
(2-3)	Clear COMS

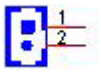
J2	Auto Power On Setting
Part Number	1653002101
Footprint	HD_2x1P_79_D
Description	PIN HEADER 2*1P 180D(M)SQUARE 2.0mm DIP W/O Pb
Setting	Function
NC	Power Button for Power On

J3	LCD Power
Part Number	1653003201
Footprint	HD_3x2P_79_D
Description	PIN HEADER 3*2P 180D(M) 2.0mm DIP SQUARE WO/Pb
Setting	Function
(1-3)*	+3.3V
(3-5)	+5V
(3-4)	+12V

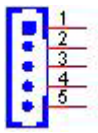
J4	DDR3L SEL
Part Number	1653000125
Footprint	HD_2x1P_79_H224_D
Description	
Setting	Function
(1-2)*	DDR3L

J5	COM2 Setting
Part Number	1653003260
Footprint	HD_3x2P_79
Description	PIN HEADER 3*2P 180D(M) 2.0mm SMD SOUARE PIN
Setting	Function
(1-2)*	RS232
(3-4)	RS485
(5-6)	RS422

CN1	Power Switch
Part Number	1655302020
Footprint	WF_2P_79_BOX_R1_D
Description	WAFER BOX 2P 180D(M) 2.0mm W/Lock
Pin	Pin Name
1	PSIN
2	GND

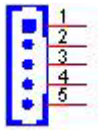


CN2	Reset
Part Number	1655302020
Footprint	WF_2P_79_BOX_R1_D
Description	WAFER BOX 2P 180D(M) 2.0mm W/Lock
Pin	Pin Name
1	RESET#
2	GND

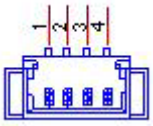


CN3	Inverter Power Output
Part Number	1655000453
Footprint	WHL5V-2M-24W1140

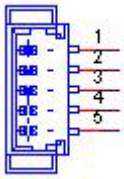
Description	WAFER BOX 2.0mm 5P 180D(M) DIP WO/Pb JIH VEI
Pin	Pin Name
1	+12V
2	GND
3	ENABKL
4	VBR
5	+5V



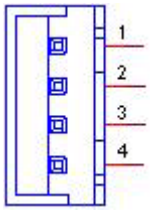
CN4	**SMBus**
Part Number	1655904020
Footprint	FPC4V-125M
Description	Wafer SMT 1.25mmS/T type 4P 180D(M) 85205-04001
Pin	Pin Name
1	GND
2	SMB_DAT
3	SMB_CLK
4	+5V



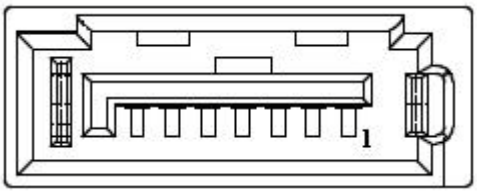
CN5	**RS422/485**
Part Number	1655004032
Footprint	WF_5P_49_BOX_85205
Description	
Pin	Pin Name
1	422RX-
2	422RX+
3	422/485TX+
4	422/485TX-
5	GND



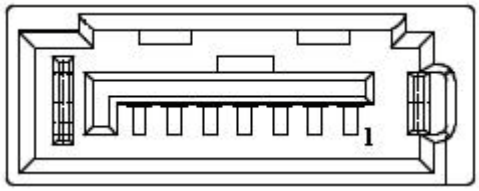
CN6	SATA Power
Part Number	1655001154
Footprint	WF_4P_98_BOX_R1_D
Description	
Pin	Pin Name
1	+5V
2	GND
3	GND
4	+12V



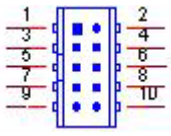
CN7	SATA2
Part Number	1654007578
Footprint	SATA_7P_WATF-07DBN6SB1U
Description	
Pin	Pin Name
1	GND
2	TX+
3	TX-
4	GND
5	RX-
6	RX+
7	GND



CN8	SATA1
Part Number	1654007578
Footprint	SATA_7P_WATF-07DBN6SB1U
Description	
Pin	Pin Name
1	GND
2	TX+
3	TX-
4	GND
5	RX-
6	RX+
7	GND



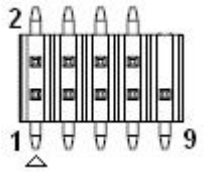
CN9	Audio
Part Number	1653004099
Footprint	HD_5x2P_79_23N685B-10M10
Description	
Pin	Pin Name
1	LOUTR
2	LINR
3	GND
4	GND
5	LOUTL
6	LINL
7	GND
8	GND
9	MIC1R
10	MIC1L



Matching Cable: 1703100152

CN12	SODIMMDDR3_204
Part Number	1651001649
Footprint	DDR3_204P_2-2013310-1
Description	
Pin	Pin Name

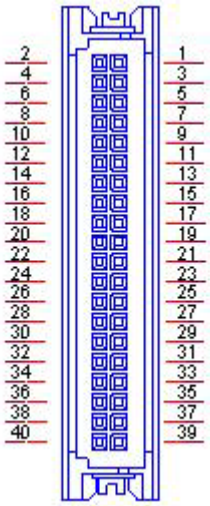
CN13	Internal USB
Part Number	1653005260
Footprint	HD_5x2P_79_N10
Description	PIN HEADER 2*5P 180D(M) 2.0mm SMD IDIOT-PROOF
Pin	Pin Name
1	+5V
2	+5V
3	A_D-
4	B_D-
5	A_D+
6	B_D+
7	GND
8	GND
9	GND



Matching Cable: 1703100260 1703100121

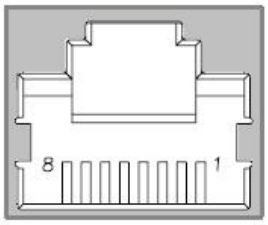
CN14	48 bits LVDS Panel
Part Number	1653920200
Footprint	SPH20X2
Description	*CONN. 40P 90D 1.25mm SMD WO/Pb DF13-40DP-1.25V
Pin	Pin Name
1	+5V or +3.3V
2	+5V or +3.3V
3	GND
4	GND
5	+5V or +3.3V
6	+5V or +3.3V
7	LVDS0_D0-
8	LVDS1_D0-
9	LVDS0_D0+
10	LVDS1_D0+
11	GND
12	GND

13	LVDS0_D1-
14	LVDS1_D1-
15	LVDS0_D1+
16	LVDS1_D1+
17	GND
18	GND
19	LVDS0_D2-
20	LVDS1_D2-
21	LVDS0_D2+
22	LVDS1_D2+
23	GND
24	GND
25	LVDS0_CLK-
26	LVDS1_CLK-
27	LVDS0_CLK+
28	LVDS1_CLK+
29	GND
30	GND
31	NC
32	NC
33	GND
34	GND
35	LVDS0_D3-
36	LVDS1_D3-
37	LVDS0_D3+
38	LVDS1_D3+
39	NC
40	NC

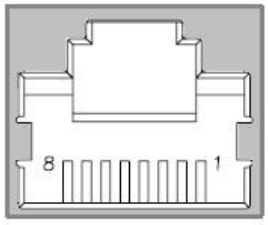


CN15	LAN1/LAN2
Part Number	1652003274
Footprint	RJ45_28P_RTB-19GB9J1A
Description	PHONE JACK RJ45 28P DIP Gold flash RTB-19GB9J1A
Pin	Pin Name
1	TX+(10/100),BI_DA+(GHz)
2	TX-(10/100),BI_DA-(GHz)
3	RX+(10/100),BI_DB+(GHz)
4	BI_DC+(GHz)
5	BI_DC-(GHz)
6	RX-(10/100),BI_DB-(GHz)
7	BI_DD+(GHz)
8	BI_DD-(GHz)

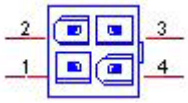
LAN1



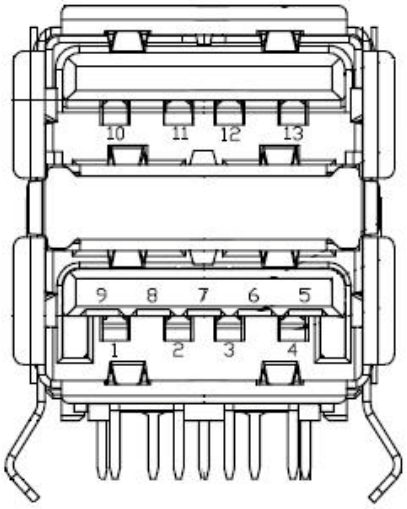
LAN2



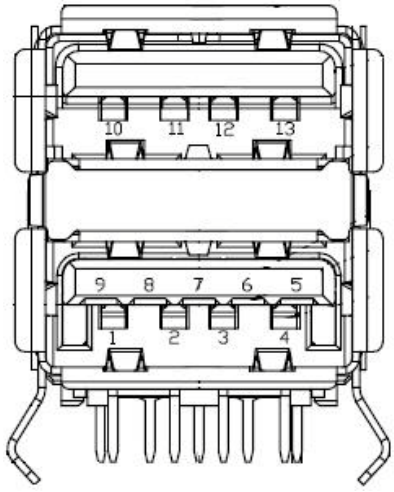
CN18	12V Power Input
Part Number	1655404090
Footprint	WF_2x2P_165_BOX_RA_D_740SP
Description	ATX PWR CONN. 2*2P 180D 4.2mm 24W4310-04S10-01T
Pin	Pin Name
1	GND
2	GND
3	+12V
4	+12V



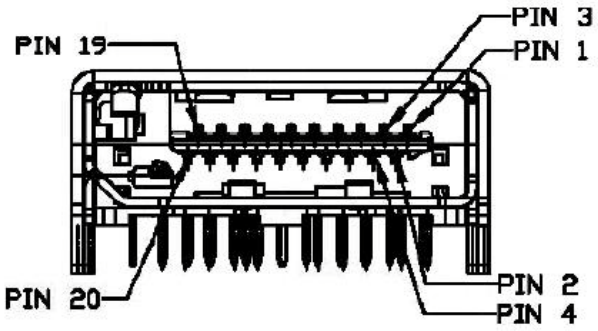
CN19	**External USB2.0+USB3.0**
Part Number	1654010199
Footprint	USB_13P_UEA1112C-UHS6-4F
Description	
Pin	Pin Name
1	+5V
2	D-
3	D+
4	GND
5	SSRX-
6	SSRX+
7	GND
8	SSTX-
9	SSTX+
10	+5V
11	D-
12	D+
13	GND



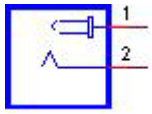
CN20	**External USB2.0+USB3.0**
Part Number	1654010199
Footprint	USB_13P_UEA1112C-UHS6-4F
Description	
Pin	Pin Name
1	+5V
2	D-
3	D+
4	GND
5	SSRX-
6	SSRX+
7	GND
8	SSTX-
9	SSTX+
10	+5V
11	D-
12	D+
13	GND



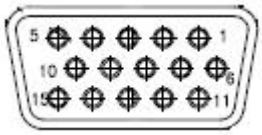
CN21	HDMI+DISPLAY_21H
Part Number	1654010203
Footprint	HDMICON_21P_845-002-217CRL
Description	
Pin	Pin Name



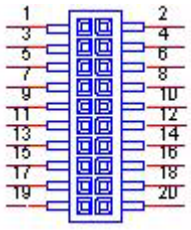
CN22	DC JACK
Part Number	1652005624
Footprint	PJ_2P_2DC-G213B200
Description	
Pin	Pin Name
1	+VIN
2	GND



CN23	**VGA**
Part Number	1654000055
Footprint	DBVGA-VF5MS
Description	D-SUB Conn. 15P 90D(F) DIP 070242FR015S200ZU
Pin	Pin Name
1	RED
2	GREEN
3	BLUE
4	NC
5	GND
6	GND
7	GND
8	GND
9	NC
10	GND
11	NC
12	DDAT
13	HSYNC
14	VSYNC
15	DCLK

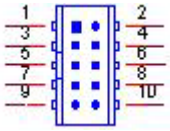


CN24	COM1/COM2
Part Number	1653004793
Footprint	HD_10x2P_79_23N685B-20M10
Description	
Pin	Pin Name
1	DCD1#
2	DSR1#
3	RXD1
4	RTS1#
5	TXD1
6	CTS1#
7	DTR1#
8	RI1#
9	GND
10	GND
11	DCD2#
12	DSR2#
13	RXD2
14	RTS2#
15	TXD2
16	CTS2#
17	DTR2#
18	RI2#
19	GND
20	GND

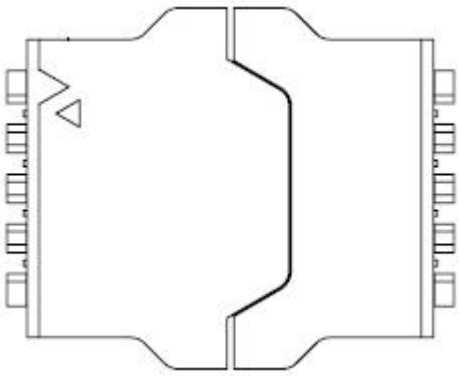


Matching Cable: 1701200220

CN25	GPIO
Part Number	1653004099
Footprint	HD_5x2P_79_23N685B-10M10
Description	
Pin	Pin Name
1	+5V
2	GPIO4
3	GPIO0
4	GPIO5
5	GPIO1
6	GPIO6
7	GPIO2
8	GPIO7
9	GPIO3
10	GND

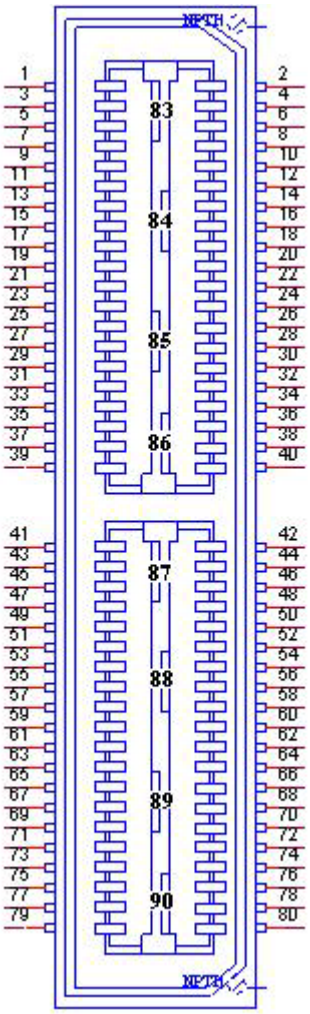


CN26	BIOS Socket
Part Number	1651000682
Footprint	SOCKET_8P_ACA-SPI-004-K01
Description	IC SKT 8P SMD WO/Pb C ACA-SPI-004-K01
Pin	Pin Name
1	CE#
2	SO
3	WP#
4	GND
5	SI
6	SCK
7	HOLD#
8	+3.3V



CN27	MIOe
Part Number	1654006235
Footprint	BB_40x2P_32_1625x285_2HOLD
Description	
Pin	Pin Name
1	GND
2	GND
3	PCIE_RX0+
4	PCIE_TX0+
5	PCIE_RX0-
6	PCIE_TX0-
7	GND
8	GND
9	PCIE_RX1+
10	PCIE_TX1+
11	PCIE_RX1-
12	PCIE_TX1-
13	GND
14	GND
15	PCIE_RX2+
16	PCIE_TX2+
17	PCIE_RX2-
18	PCIE_TX2-
19	GND
20	GND
21	PCIE_RX3+
22	PCIE_TX3+
23	PCIE_RX3-
24	PCIE_TX3-
25	GND
26	GND
27	PCIE_CLK+
28	LOUTL
29	PCIE_CLK-
30	LOUTR
31	GND
32	AGND
33	SMB_CLK
34	NC
35	SMB_DAT
36	NC
37	PCIE_WAKE#
38	NC
39	RESET#
40	NC
41	SLP_S3#
42	CLK33M

43	NC
44	LPC_AD0
45	DDP_HPD
46	LPC_AD1
47	GND
48	LPC_AD2
49	DDP_AUX+
50	LPC_AD3
51	DDP_AUX-
52	LPC_DRQ#0
53	GND
54	LPC_SERIRQ
55	DDP_D0+
56	LPC_FRAME#
57	DDP_D0-
58	GND
59	GND
60	USB0_D+
61	DDP_D1+
62	USB0_D-
63	DDP_D1-
64	GND
65	GND
66	USB1_D+/USB_SSTX+
67	DDP_D2+
68	USB1_D-/USB_SSTX-
69	DDP_D2-
70	GND
71	GND
72	USB2_D+/USB_SSRX+
73	DDP_D3+
74	USB2_D-/USB_SSRX-
75	DDP_D3-
76	GND
77	GND
78	USB_OC#
79	+12VSB
80	+12VSB
83	GND
84	GND
85	GND
86	GND
87	+5VSB
88	+5VSB
89	+5VSB
90	+5VSB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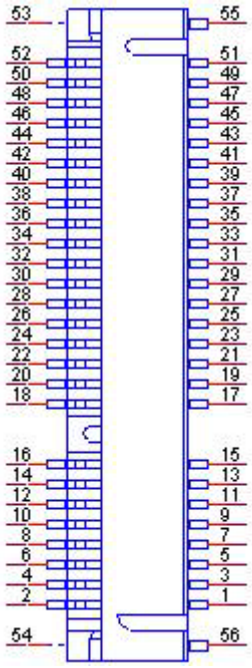
MPTH

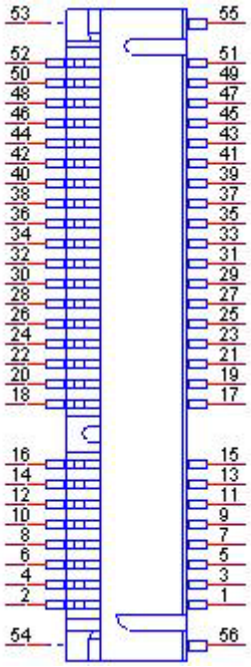
CN28	**Mini PCIE**
Part Number	1654006715
Footprint	MINIPCIE_FULL_HALF_STANDARD
Description	
Pin	Pin Name
1	WAKE#
2	+3.3VSB
3	NC
4	GND
5	NC
6	+1.5V
7	NC
8	UIM_PWR
9	GND
10	UIM_DATA
11	REFCLK-
12	UIM_CLK
13	REFCLK+
14	UIM_RESET
15	GND
16	UIM_VPP
17	NC
18	GND
19	NC
20	NC
21	GND
22	PERST#
23	PERn0
24	+3.3VSB
25	PERp0
26	GND
27	GND
28	+1.5V
29	GND
30	SMB_CLK
31	PETn0
32	SMB_DAT
33	PETp0
34	GND
35	GND
36	USB D-
37	GND
38	USB D+
39	+3.3VSB
40	GND
41	+3.3VSB
42	NC

43	GND
44	NC
45	NC
46	NC
47	NC
48	+1.5V
49	NC
50	GND
51	NC
52	+3.3VSB

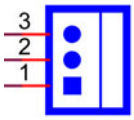


CN29	**Mini PCIE**
Part Number	1654006715
Footprint	MINIPCIE_FULL_HALF_STANDARD
Description	
Pin	Pin Name
1	WAKE#
2	+3.3VSB
3	NC
4	GND
5	NC
6	+1.5V
7	NC
8	UIM_PWR
9	GND
10	UIM_DATA
11	REFCLK-
12	UIM_CLK
13	REFCLK+
14	UIM_RESET
15	GND
16	UIM_VPP
17	NC
18	GND
19	NC
20	NC
21	GND
22	PERST#
23	PERn0
24	+3.3VSB
25	PERp0
26	GND
27	GND
28	+1.5V
29	GND
30	SMB_CLK
31	PETn0
32	SMB_DAT
33	PETp0
34	GND
35	GND
36	USB D-
37	GND
38	USB D+
39	+3.3VSB
40	GND
41	+3.3VSB
42	NC

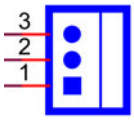
43	GND
44	NC
45	NC
46	NC
47	NC
48	+1.5V
49	NC
50	GND
51	NC
52	+3.3VSB



FAN1	CPU FAN
Part Number	1655003010
Footprint	WHP3VA
Description	
Pin	Pin Name
1	GND
2	+V12
3	FANTACH



FAN2	System FAN
Part Number	1655003010
Footprint	WHP3VA
Description	
Pin	Pin Name
1	GND
2	+V12
3	N/C



Appendix B

UTC-500 Peripherals Series Installation Guide

B.1 UTC-500 Peripherals Series Installation Guide

Model	Description
UTC-P01-A0E	2M Camera Module for UTC-500 Series
UTC-P02-A0E	Magnetic Stripe Card Reader for UTC-500 Series
UTC-P03-A0E	RFID Reader for UTC-500 Series
UTC-P06-A0E	Smart Card Reader for UTC-500 Series

Packing List

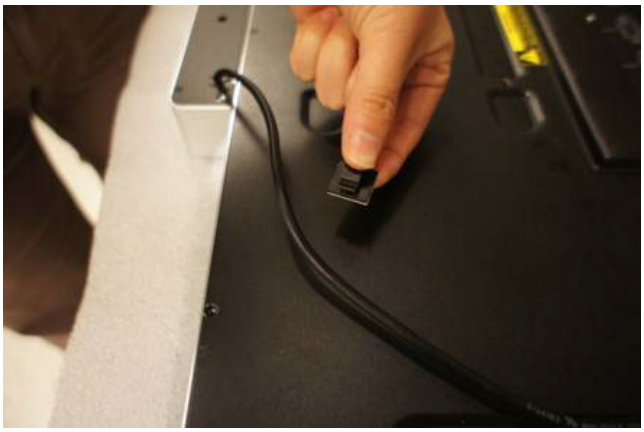
- UTC-PXX
- CD-Driver
- Cable Clamp x 2

Assemble the UTC-Peripherals

1. Attach the UTC-peripheral to the UTC 500 series side groove.
   (The UTC-500's uniquely designed side groove creates an attachment area that runs all around the frame; customer's can easily attach peripherals to it for their applications.)

2. Fasten the 2 screws to fix the peripheral in place.

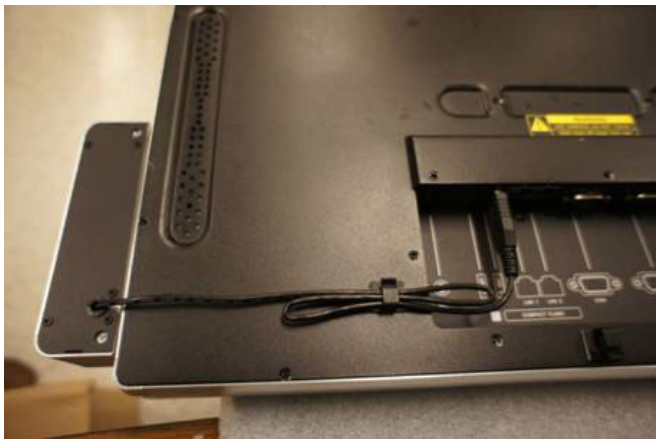
3. Connect the cable to an I/O port (USB).



4. Choose a location to put the cable clamp and attach the cable to it.

Attaching a peripheral on the top of the unit

Attaching a peripheral on the bottom of the unit



An attachment to the left side

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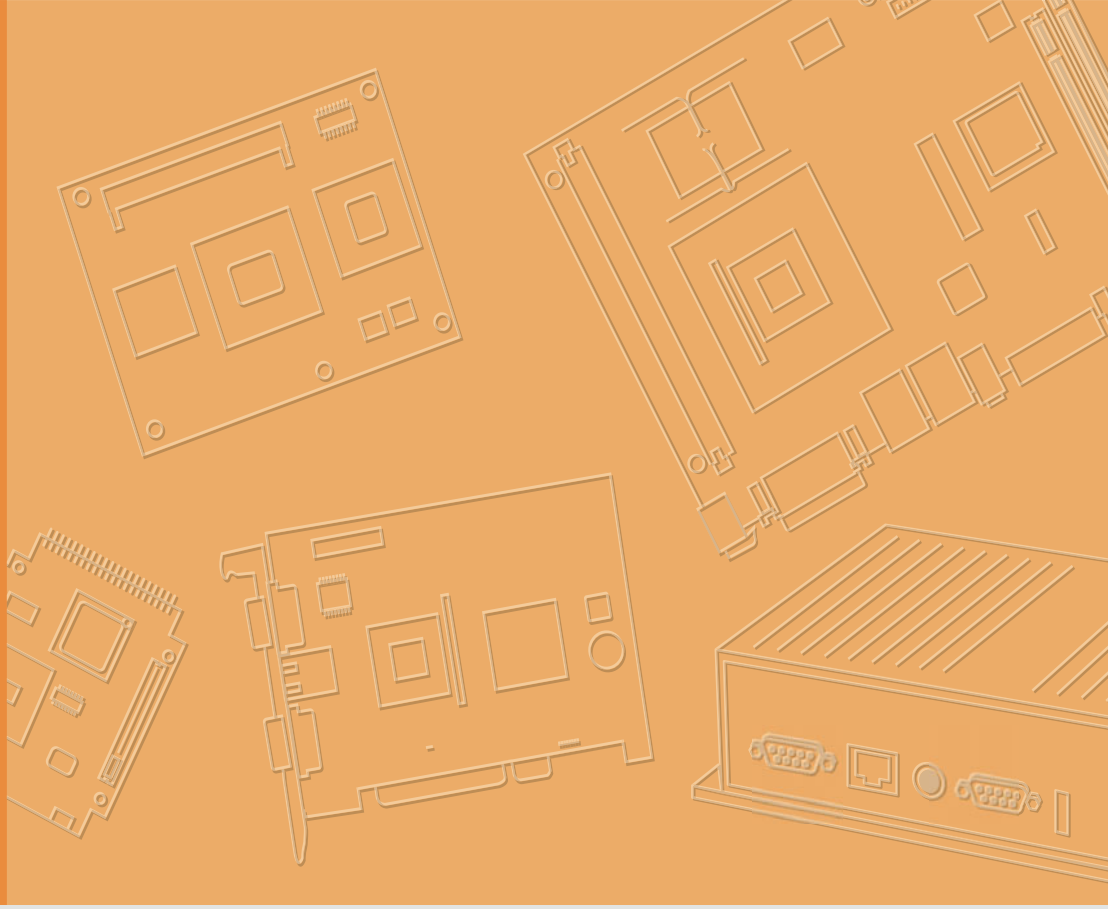

用户手册

UTC-520A/B/C

基于 AMD T40E （UTC-520A）/
Intel Atom D2550 （UTC-520B）/
Intel Core i7 （UTC-520C）处理
器的 21.5” LCD 通用型触控式电脑

ADVANTECH
Enabling an Intelligent Planet

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本手册适用于 UTC-520A/B/C 产品。

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1. 收集您所遇到的问题信息 （例如，CPU 主频、使用的研华产品及其它软件、硬件等）。请注意屏幕上出现的任何不正常信息显示。
2. 打电话给您的供货商，描述故障问题。请借助手册，产品和任何有帮助的信息。
3. 如果您的产品被诊断发生故障，请从您的供货商那里获得 RMA （Return Material Authorization） 序列号。这可以让我们尽快地进行故障产品的回收。
4. 请仔细地包装故障产品，并在包装中附上完整的售后服务卡片和购买日期证明（如销售发票）。我们对无法提供购买日期证明的产品不提供质量保证服务。
5. 把相关的 RMA 序列号写在外包装上，并将其运送给销售人员。

料号：2008C52020　　第一版

中国印刷　　2014 年 2 月

符合性声明

FCC B 级

根据 FCC 规则第 15 款，本设备已经过检测并被判定符合 B 级数字设备标准。这些限制旨在为居住环境下的系统操作提供合理保护，使其免受有害干扰。本设备会产生、使用和发射无线电频率能量。如果没有按照手册说明正确安装和使用，可能对无线电通讯造成有害干扰。但即使按照手册说明进行安装和使用，也并不能保证不会产生干扰。若本设备会对无线电或电视信号接收产生有害干扰，用户可通过开、关设备进行确认。当本设备产生有害干扰时，用户可采取下面的措施来解决干扰问题：

- 调整接收天线的方向或位置
- 增大本设备与接收器之间的距离
- 将本设备的电源接头插在与接收器使用不同电路的电源插座
- 若需技术支持，请咨询经销商或经验丰富的无线电 / 电视技术人员

包装清单

安装系统之前，用户需确认包装中含有本设备以及下面所列各项，并确认设备完好。若有任何不符，请立即与经销商联系。

- UTC-520A/B/C 系列设备
- UTC-520A/B/C 附件
  - DC 12 V/60 W 电源适配器 （UTC-520A/B），DC 12 V/84 W 电源适配器 （UTC-520C）
  - 安装套件和螺丝包

技术支持与服务

1. 有关该产品的最新信息，请访问研华公司的网站：
   http://support.advantech.com.cn
2. 用户若需技术支持，请与当地分销商、销售代表或研华客服中心联系。进行技术咨询前，用户须将下面各项产品信息收集完整：
   - 产品名称及序列号
   - 外围附加设备的描述
   - 用户软件的描述 （操作系统、版本、应用软件等）
   - 产品所出现问题的完整描述
   - 每条错误信息的完整内容

警告！

如果电池更换不正确，将有爆炸的危险。因此，只可以使用制造商推荐的同一种或者同等型号的电池进行替换。请按照制造商的指示处理旧电池。

警告！

1. *额定输入电压：12 V，5 A (UTC-520A/B)，12 V，7 A （UTC-520C）*
2. *采用 3 V @ 195 mA 锂电池*
3. *包装：请使用双手搬动产品，小心轻放*
4. *维护：为了正确地维护和清洁设备表面，请使用通过认证的产品或使用干抹布进行清洁。*
5. *CF：插入或移除 CF 卡之前，请关闭电源。*

联系信息：

欧洲代表处：Advantech Europe GmbH Kolberger Strafle 7

D-40599 Dβsseldorf, Germany

电话：49-211-97477350

传真：49-211-97477300

安全指示

1. 请仔细阅读此安全操作说明。
2. 请妥善保存此用户手册供日后参考。
3. 用湿抹布清洗设备前，请从插座拔下电源线。请不要使用液体或去污喷雾剂清洗设备。
4. 对于使用电源线的设备，设备周围必须有容易接触到的电源插座。
5. 请不要在潮湿环境中使用设备。
6. 请在安装前确保设备放置在可靠的平面上，意外跌落可能会导致设备损坏。
7. 设备外壳的开口是用于空气对流，从而防止设备过热。**请不要覆盖这些开口。**
8. 当您连接设备到电源插座上前，请确认电源插座的电压是否符合要求。
9. 请将电源线布置在人们不易绊到的位置，并不要在电源线上覆盖任何杂物。
10. 请注意设备上的所有警告标识。
11. 如果长时间不使用设备，请将其同电源插座断开，避免设备被超标的电压波动损坏。
12. 请不要让任何液体流入通风口，以免引起火灾或者短路。
13. 请不要自行打开设备。为了确保您的安全，请由经过认证的工程师来打开设备。
14. 如遇下列情况，请由专业人员来维修：
    - 电源线或者插头损坏；
    - 设备内部有液体流入；
    - 设备曾暴露在过于潮湿的环境中使用；
    - 设备无法正常工作，或您无法通过用户手册来使其正常工作；
    - 设备跌落或者损坏；
    - 设备有明显的外观破损。
15. 请不要把设备放置在超出我们建议的温度范围的环境，即不要低于 -20° C （-4° F）或高于 60° C （140° F），否则可能会损坏设备。
16. **注意：**计算机配置了由电池供电的实时时钟电路，如果电池更换不正确，将有爆炸的危险。因此，只可以使用制造商推荐的同一种或者同等型号的电池进行替换。请按照制造商的指示处理旧电池。

根据 IEC 704-1:1982 的规定，操作员所在位置的声压级不可高于 70dB(A)。

免责声明：该安全指示符合 IEC 704-1 的要求。研华公司对其内容的准确性不承担任何法律责任。

目录

第 1 章

概述

本章介绍 UTC-520A/B/C 的一般信息。

内容包括：

- 产品简介
- 一般规格
- LCD 规格
- 产品尺寸

1.1 产品简介

UTC-520A/B/C 触控电脑采用了低功耗的 AMD T40E / Intel Atom D2550 / Intel Core i7 处理器，可作为交互式自助服务终端和多媒体计算机。UTC-520A/B/C 采用基于 PC 的系统，配有 21.5” TFT LCD 显示器、板载 PCIe 以太网控制器、3 个 COM 端口 （UTC-520 带 2 个 COM 端口）和 1 个 VGA 接口。UTC-520A/B/C 配有内置 IDE 接口 （用于 CF 卡），1 个用于 HDD 的 SATA 接口和 1 个 mini PCIe 扩展槽，是一款紧凑型和用户友好型多功能电脑。此外，UTC-520A/B/C 产品的通用化设计使其具有极大的灵活性，因而适合于多种安装应用。该产品支持壁挂式安装和台式安装。

UTC-520A/B/C 采用了简单、完整、紧凑的高度整合型多媒体系统，因此便于系统集成商将其安装到各种应用中。常见工业应用包括自助交易、医疗保健、信息自助服务终端以及交互式播放。UTC-520A/B/C 解决方案可靠、经济、高效，能够满足用户的应用需求。

1.2 一般规格

1.2.1 一般规格

- **尺寸 （W x H x D）：** 517.64 mm (L) x 313.51 mm (H) x 43.5 mm (D)
- **重量：** 8 kg
- **电源：ATX 型输入电压：** +12 Vdc，5 A (UTC-520A/B) / +12 Vdc，7 A (UTC-520C)
- **电源适配器：** AC/DC （标准内置）
  - 输入电压：100 ~ 240 V_{AC}
  - 输出电压：12 V @ 5 A (UTC-520A/B) / 12 V @ 7 A (UTC-520C)
- **磁盘盒：** 1 x 2.5” SATA HDD
- **前面板：** IP65/NEMA4 防护等级

1.2.2 标准 PC 功能

- **CPU：**
  - 板载 AMD G 系列 T40E 双核 1.0 GHz （UTC-520A）
  - 板载 Intel Atom 双核 D2550 1.8 GHz (UTC-520B)
  - 板载 Intel Core i7 3517UE 1.7 GHz (UTC-520C)
- **BIOS：**
  - AMI EFI 32-Mbit (UTC-520A)
  - AMI EFI 16-Mbit (UTC-520B)
  - AMI EFI 64-Mbit (UTC-520C)
- **系统芯片：**
  - AMD G 系列 + A50M FCH (UTC-520A)
  - Intel Atom D2550 + NM10 (UTC-520B)
  - Intel Core i7 3517UE + Intel QM77 (UTC-520C)
- **二级缓存：**
  - 512 KB (UTC-520A)
  - 1 MB (UTC-520B)
  - 1 MB (L3，4 MB / UTC-520C)
- **系统内存:** 支持高达 4 G 的 SO-DIMM DDR3 内存 (UTC-520A/B) / 8 G 的 SO-DIMM DDR3 内存 (UTC-520C)
- **串行端口：** 3 x 外部 COM (UTC-520A/B)/ 2 x 外部 COM (UTC-520C)

- **通用串行总线 （USB）接口：**支持高达 4 x USB V2.0 （UTC-520A/B） / 2 x USB V2.0 （UTC-520C）
- **Mini PCI-E 总线扩展槽：**支持 1 x Mini PCI-E 设备 （无线网卡），UTC-520B 带 SIM 卡槽
- **固态磁盘：**支持 1 x 内部 CFAST （UTC-520A/B）
- **看门狗定时器：**单芯片看门狗定时器，255 级时间间隔，可通过软件设置
- **电源管理：**完全 ACPI （高级配置与电源接口）2.0，支持 S0、S1、S3、S4 和 S5

1.2.3 VGA 接口：

- **芯片组：**GPU 包含第三代显示内核
- **内存容量：**高达 512 MB 的动态视频内存
- **接口：**VGA
- **显示模式：**
  - CRT：模拟量 RGB 显示输出，分辨率高达 2048*1536 @ 60 Hz

表 1.1： 内部显示特性

UTC-520A	UTC-520B	UTC-520C
DirectX® 11 显示，带 UVD 3.0	DirectX 9 和 OpenGL 3.0	DirectX 11、DirectX 10.1、DirectX 10、DirectX 9 支持
多达 2 个 Display Port/TMDS	Display Port 1.1, HDMI 1.3a	OpenGL 3.0 支持
集成 VGA DAC	支持 HDCP 1.3	Displayport 1.1a
Displayport 1.1a	Intel Display Power saving technology 6.0	Intel® HD Graphics 4000，带 500 MHz 基频显示和 1 GHz 最大动态基频显示
集成显示	SGXS45 Power VR Core 400/600 MHz	
引擎时钟速度：500 MHz 或 280 MHz，依赖型		

1.2.4 音频功能

- **音频：**高清音频 （HD），3 W x 2 扬声器

1.2.5 LAN 功能

- **芯片组：**
  - Realtek RTL8111E-VB-GR (UTC-520A)
  - Intel 82583V (UTC-520B)
  - Intel 82579LM + Intel82583V (UTC-520C)
- **速度：**1000 Mbps/ 接口：2 x RJ45
- **网络 （LAN）唤醒：**支持网络唤醒功能，带 ATX 电源控制
- 支持 LAN teaming 功能 （发生故障容差时）

1.2.6 触摸屏 （可选）

类型	模拟电阻 5 线式	投射电容式

分辨率	连续	
透光率	80%	90%
控制器	USB 接口	USB 接口
功耗	<5 V @ 60 mA	
软件驱动	支持 Windows XP/7/XPE	
耐久性 （触摸寿命）	36,000,000	50,000 小时

1.2.7 可选模块

- **内存：** 1 x 高达 4 GB 的 SO-DIMM DDR3 1066 插槽（内置 2 G）(UTC-520A/B) / 高达 8 GB 的 SO-DIMM DDR3 1066 插槽 (UTC-520C)
- **HDD：** 2.5” SATA HDD
- **SSD：** 支持 1 x 内部 CFAST (UTC-520A/B)
- **操作系统：** Windows XP、Windows 7、Embedded Windows 8 (UTC-520 A/C)
- **触摸屏：** 模拟电阻式、投射电容式
- **电源线：** 1702002600 （美国标准）、1702002605 （欧洲标准）
- **无线局域网模块：**

  UTC-520AB-WIFIE UTC-520AB 无线局域网模块

  UTC-500 系列外围

  UTC-P01-A0E (2 M Wecam)

  UTC-P02-A0E (MSR)

  UTC-P03-A0E (RFID)

  UTC-P06-A0E (智能卡读取器)

  UTC-P07-A0E (条码读取器)

  标准落地式套件

  UTC-K01-STANDE

  UTC-K02-STANDE

  UTC-R01-STANDE

1.2.8 环境规格

- **工作温度：** 0 ~ 40° C (32 ~ 104° F)
- **储存温度：** -20 ~ 60° C
- **相对湿度：** 10 ~ 95% @ 40° C （非凝结）
- **冲击：** 10 G 峰值加速度 （11 ms 间隔）
- **认证：** EMC：CE、FCC、BSMI 和 VCCI
- **安规认证：** UL 60950、CB、CCC 和 BSMI
- **振动：** 5 ~ 500 Hz 1 Grms RMS 随机振动
- **VESA 支持：** 100 x 100 mm （建议螺丝类型 - M4 x 5)
- 支持横向和竖向模式

1.3 LCD 规格

- **显示器类型：** 21.5” TFT LCD
- **最大分辨率：** 1920 x 1080
- **色彩：** 16.7 M

- **点大小（mm）：**248.25（H）x 248.25（V）
- **视角：**178°/178°
- **亮度：**250 cd/m^2（可选 400）
- ***VR 控制：**亮度可通过 BIOS 更改

注！ *UTC-520A/B/C 上安装的彩色 LCD 显示屏具有高品质与高可靠性，但也可能有一些不亮的失效点。由于当前技术的限制，无法完全消除这些失效点。研华一直都在积极地改进这一技术。*

1.4 产品尺寸

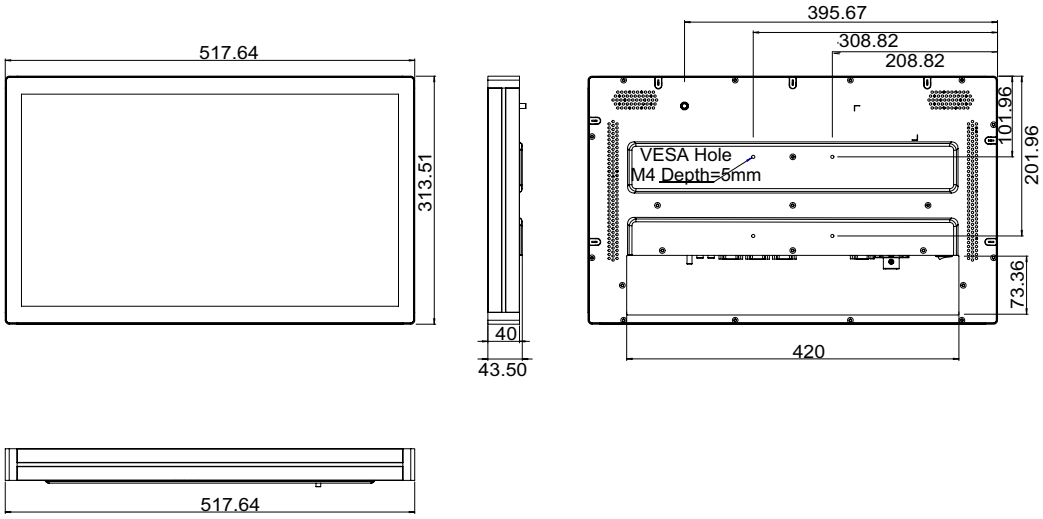


图 1.1 UTC-520A/B/C 产品尺寸

第 2 章

系统安装

本章详细介绍 UTC-520A/B/C 系统安装的信息。
内容包括：

- 入门指南
- 安装步骤
- 运行 BIOS 设置程序
- 安装系统软件

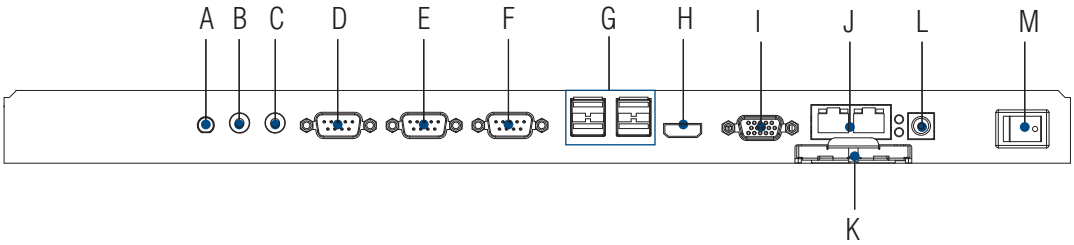
2.1 入门指南

安装 UTC-520A/B/C 之前，请先参考下图了解控件、驱动、接口和端口的位置及功能。将 UTC-520A/B/C 垂直放置在桌面上时，其前面板如图 2.1 所示。

图 2.1 UTC-520A/B/C 前视图

将平板电脑翻转，可以看到后部的 I/O 接口区，如图 2.2 所示。（I/O 接口包括串行端口、以太网端口、USB 接口、VGA 接口和 CFAST/HDMI/MIC-IN/LINE-OUT 插槽等。）

图 2.2 UTC-520A/B/C 后视图



A. 天线接口
B. 线路输出
C. 麦克输入
D. COM3 (UTC-520A/B)
E. COM2
F. COM1
G. USB 2.0 x 4 (UTC-520A/B)
H. HDMI
I. VGA
J. LAN 端口 x 2
K. CFast (UTC-520A/B)
L. DC 输入
M. 电源开关

2.2 安装步骤

2.2.1 连接电源线

UTC-520A/B/C 可连接 DC 电源插座。需要注意的是，连接电源线时只可接触插头末端。请按照图 2.5 的指导将电源线的公型插头插至 UTC-520A/B/C 的 DC 插孔。

2.2.2 连接键盘或鼠标

启动计算机前，请将键盘连接至 UTC-520A/B/C 的键盘接口。

2.2.3 电源开关

用户可在 UTC-520A/B/C 的后部找到电源开关，如图 2.2 所示。

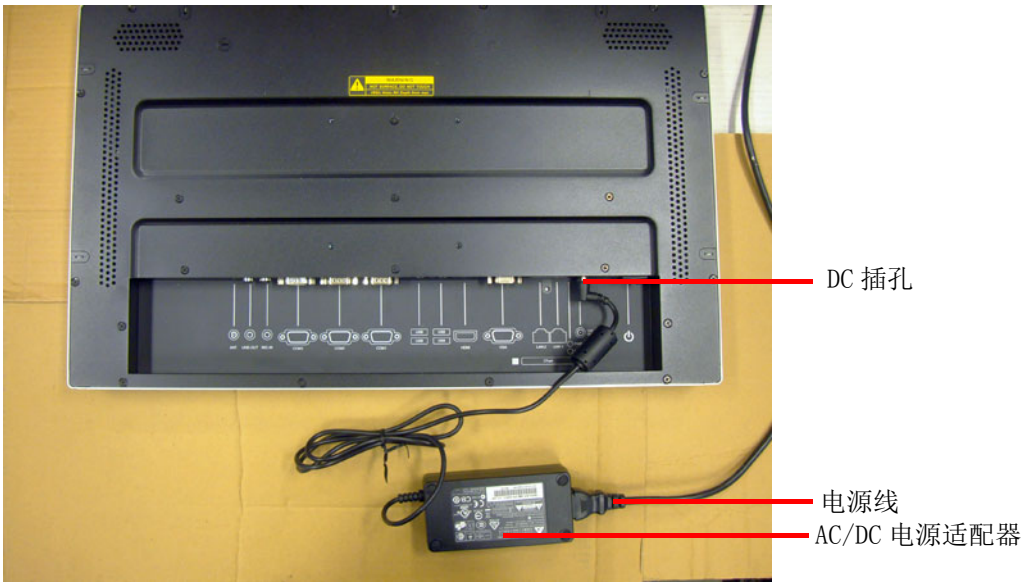


图 2.3 将电源线连接至 DC 插孔

2.3 运行 BIOS 设置程序

在用户收到 UTC-520A/B/CA/B 产品之前，经销商应该已经对其进行了安装与配置。但用户也许需要通过电脑的 BIOS （基本输入输出系统）设置程序来改变系统的配置信息，例如日期与时间或者硬盘类型。该设置程序存储在只读内存（ROM）中。开机或重启电脑时，迅速按住键盘上的 “Del” 键即可进入该设置。

用户通过该程序进行的设置将被记录在特殊的内存区域，即 CMOS RAM。该内存由一块电池供电，因此即使用户关机或重启系统，数据也不会被清除。无论何时接通电源，系统都会读取 CMOS RAM 中存储的设置信息，并将其与上电自检（POST）的设备检测结果进行比较。如果发现错误，屏幕上将显示一条错误信息，提示用户运行设置程序。

2.4 安装系统软件

运行系统供应商提供的最新版本的操作系统含有安装程序，该安装程序能够自动载入并能够指导用户进行硬盘设置及安装操作系统。下面的指导将帮助用户在UTC-520A/B/CA/B 的硬盘上安装操作系统。

注！ *UTC-520A/B/CA/B 产品装箱前，分销商和系统集成商可能已经安装了系统软件。*

安装软件之前需要先安装 HDD。软件加载的方式包括以下 4 种：

2.4.1 方式 1：以太网

用户可通过以太网端口将软件下载至 HDD。

2.4.2 方式 2：外部 USB 光盘

如果需要，可将操作系统的安装盘插入磁盘驱动器，直至弹出释放按钮。UTC-520A/B/CA/B 的 BIOS 支持系统直接从光驱启动。用户也可插入系统安装光盘。

开启 UTC-520A/B/CA/B 或同时按下 “Ctrl+Alt+Del” 键重启系统。UTC-520A/B/CA/B 将自动从磁盘或光盘加载操作系统。

当屏幕上显示安装程序的窗口时，请按照屏幕上的提示进行操作。安装程序将指导用户设置硬盘并安装操作系统。当屏幕上显示操作系统命令时 （如 A:\>），用户需对硬盘驱动器进行分区及格式化，并需通过手动操作将操作系统文件复制到硬盘。如需分区及格式化硬盘的详细指导，请参考操作系统用户手册。

2.5 安装驱动

安装好系统软件之后，用户便可设置以太网、XGA、音频和触摸屏等功能。所有的驱动程序都存储在附件盒中的 “Drivers and Utilities” 光盘中。

光盘中的各个驱动和实用程序都有各自的文本文件，可以帮助用户安装驱动并了解它们的功能。这些文件是用户手册的实用补充。

注！ *对于 UTC-520A/B/CA/B 的驱动和实用程序，如果变更，恕不另行通知。如有任何疑问，请访问研华网站或联系研华的应用工程师，获取驱动与实用程序的最新信息。*

第 3 章

硬件安装和升级

本章介绍如何安装 UTC-520A/B/C 的硬件。

内容包括：

- 简介
- 安装 2.5” HDD
- 安装 CFAST 卡 (UTC-520A/B)
- 安装内存
- 安装无线网卡

3.1 简介

UTC-520A/B/C 包含基于 PC 的计算机，由铝制外壳保护。移除后盖后，用户即可安装 HDD、DRAM 和 CF 卡。维护或硬件更新很便捷，只需移除后盖即可。

警告！ *移除后盖前，用户需确认无电流通过 UTC-520A/B/C 设备，须关闭电源并断开电源线。每次维修 UTC-520A/B/C 产品时，用户都须谨记这一点。*

3.2 安装 2.5” HDD

UTC-520A/B/C 的内部控制器可以连接一个 SATA （串行高级技术附件）硬盘。SATA 控制器的数据传输速度更快，而且 SATA 硬盘的容量可以超过 150 MB。以下为安装指导：

1. 移除后盖。
2. 将 HDD 放入金属托架内，并旋紧螺丝，如图 3.1 所示。
3. HDD 电缆 （SATA 7P+1*5P-2.5/SATA(15+7)P）紧邻金属托架。将 HDD 电缆连接至母板 （CN3/CN5）。将电缆的另一端连接至 SATA HDD。520A：CN6 （SATA 信号） + CN4 （SATA 电源）； 520B：CN14 （SATA 信号） + CN15 （SATA 电源）.
4. 将后盖放好并旋紧螺丝。

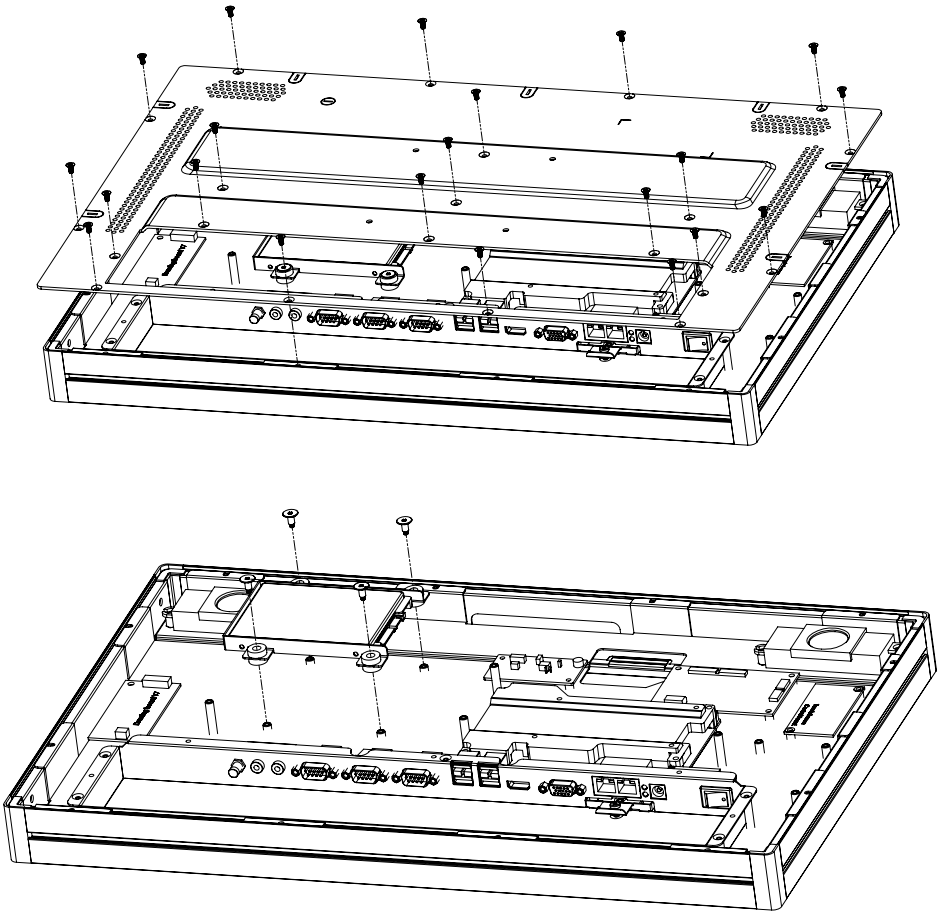


图 3.1 安装主 2.5” HDD

3.3 安装 CFAST 卡 (UTC-520A/B)

1. 请按照下图的指示安装 CF 卡。（请注意 CFAST 卡的方向）

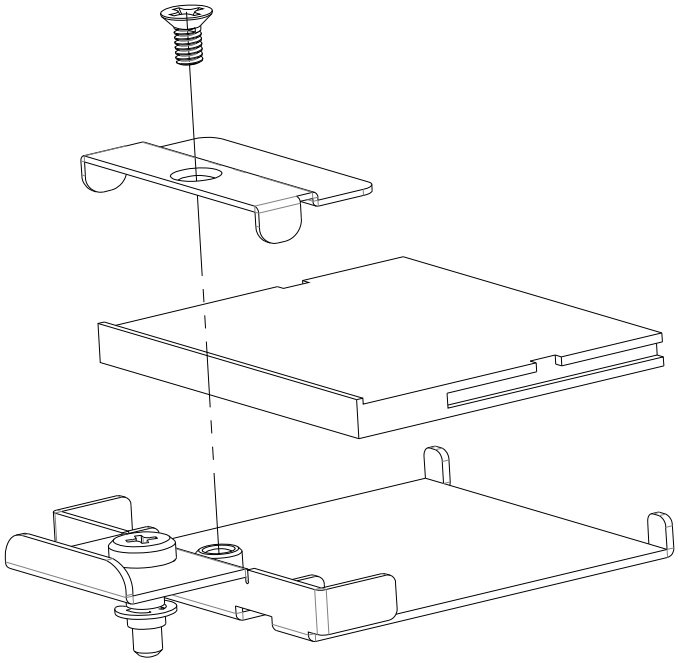


图 3.2 安装 CF 卡

3.4 安装内存卡

1. 拆下后盖。
2. 移除散热片上的 4 个螺丝。
3. 将设备底面朝上并移除底盖上的 2 个螺丝。
4. 将 DRAM 安装在 SO-DIMM 插槽上。

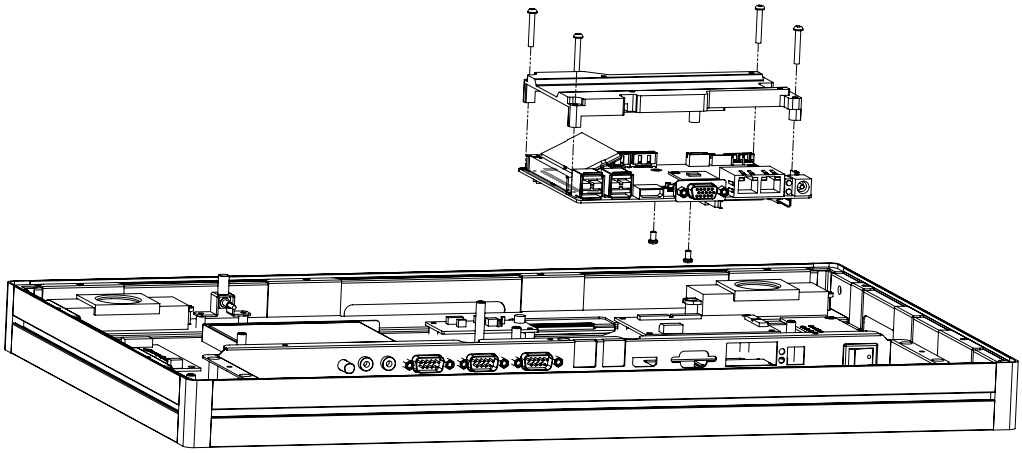
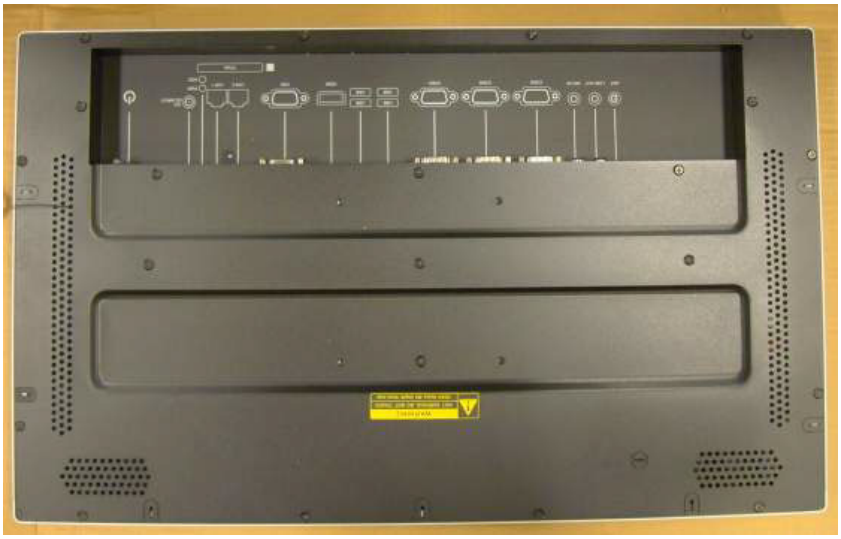


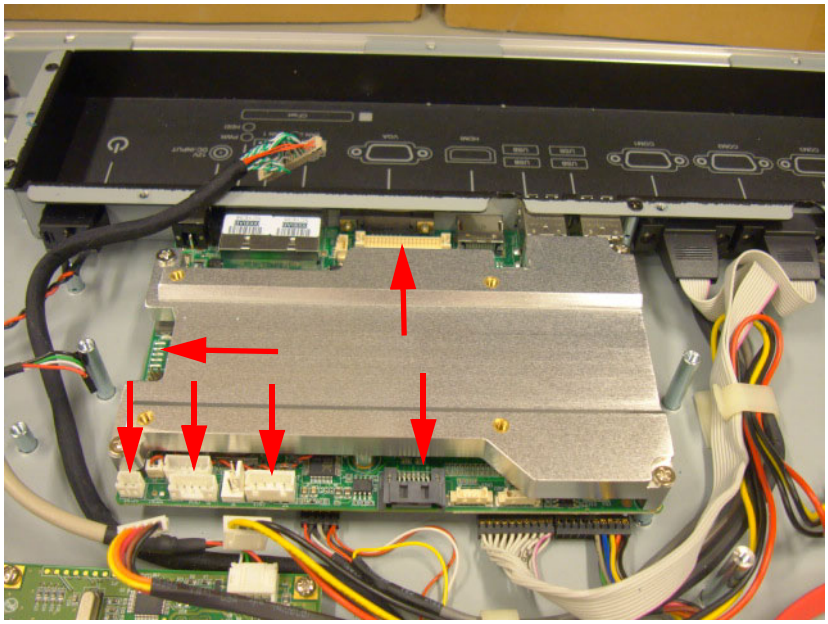
图 3.3 安装内存卡

3.5 安装无线网卡

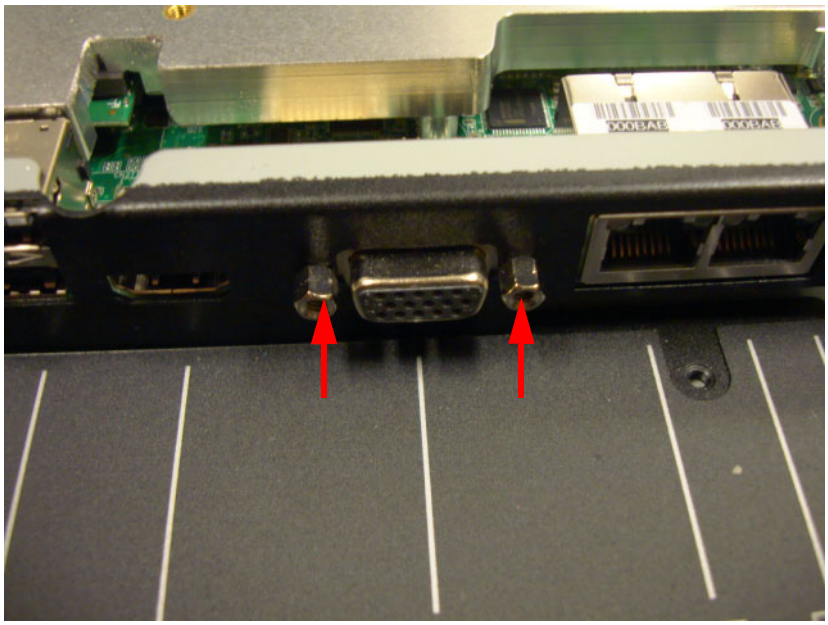
1. 移除后盖上的 21 个螺丝。



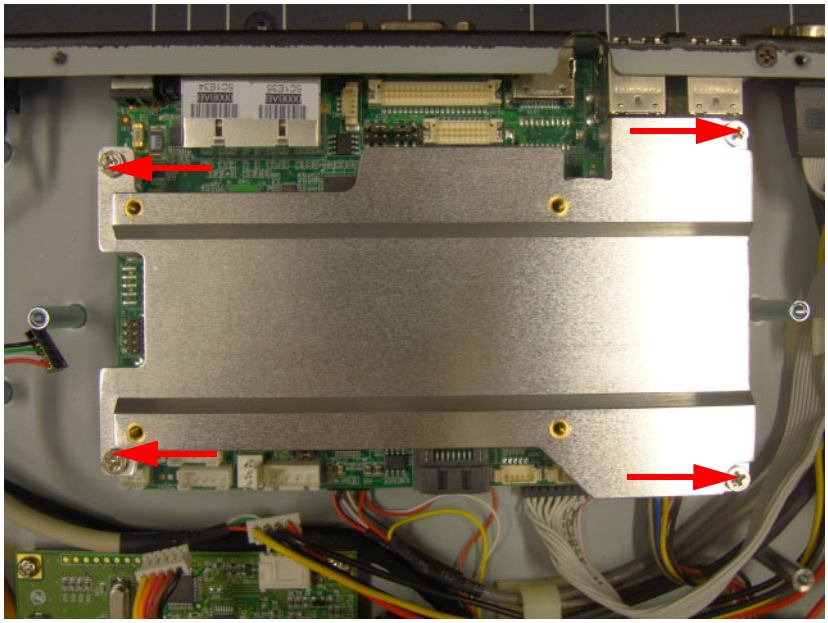
2. 移除 M/B 顶盖上的电缆接头。



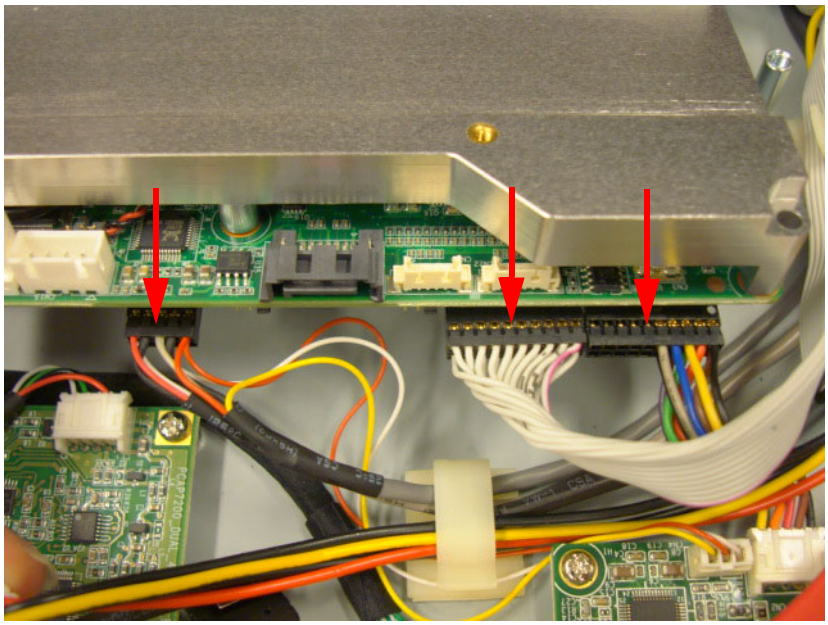
3. 移除 VGA 接口上的 2 个螺丝。



移除 M/B 散热片上的 4 个螺丝。

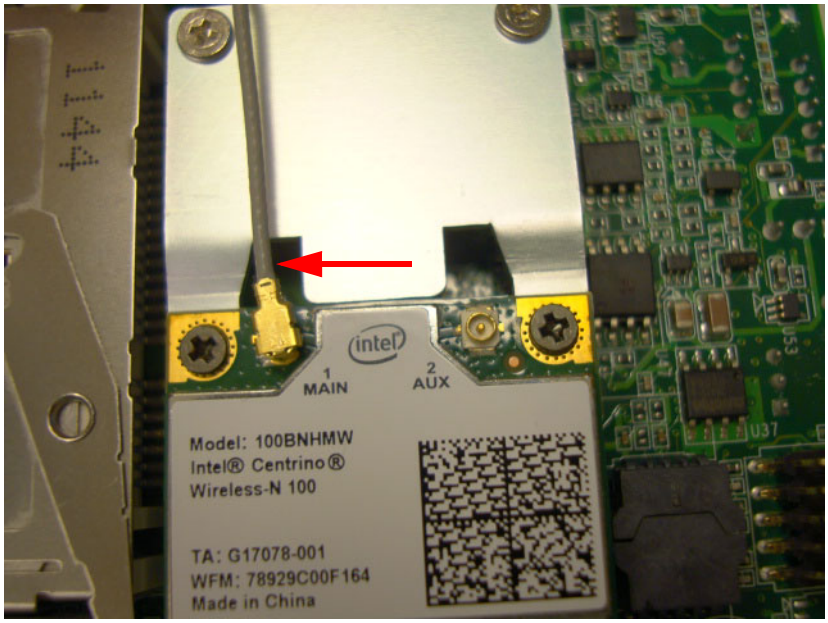


4. 移除 M/B 底盖上的电缆接口。



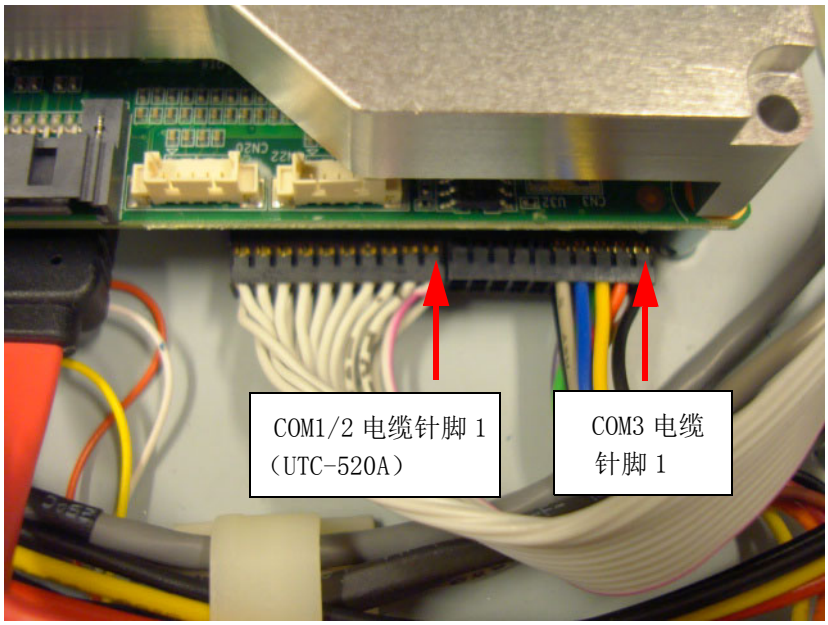
5. 将无线网卡安装在 Mini PCI-e 插槽中 （M/B 底部）。

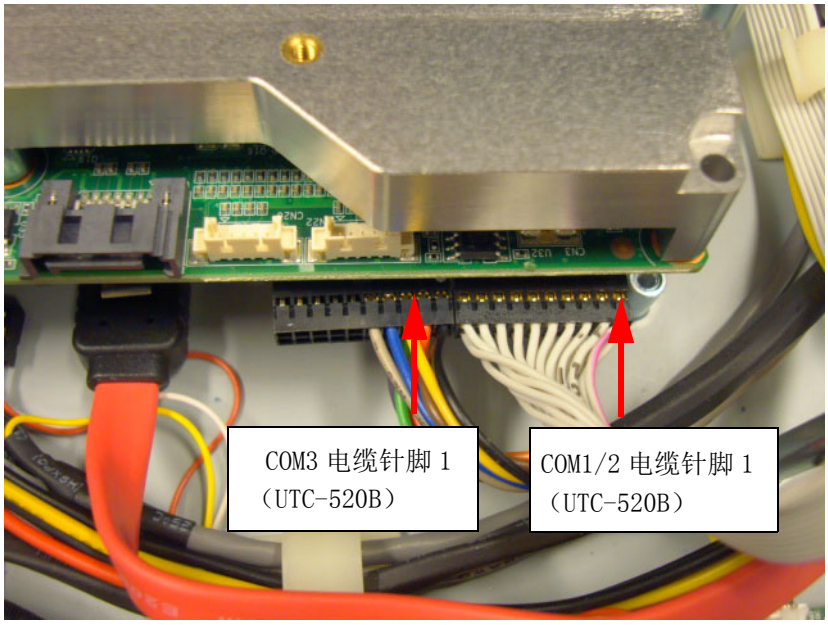
将同轴电缆连接到无线网卡上的 “ANT1” 位置。



6. 放回 M/B 并重新连接好 M/B 底部的电缆。

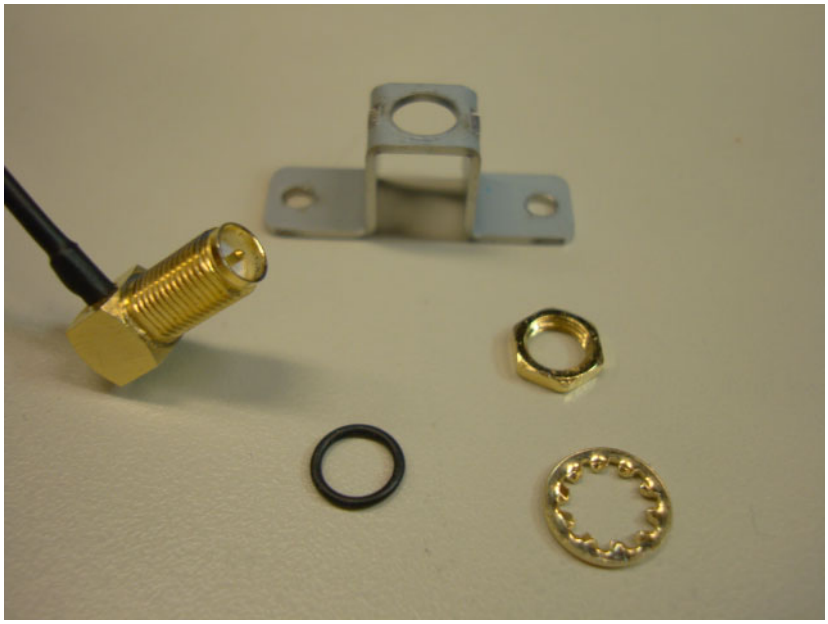
UTC-520A



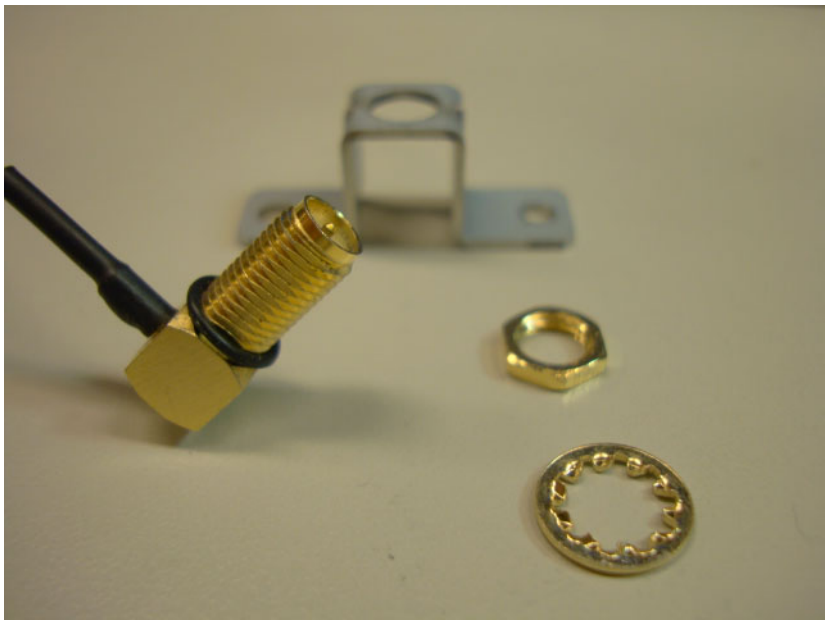


7. 重新连接 M/B 顶部的电缆。
   重新固定 M/B 散热片上的 4 个螺丝。
   重新固定 VGA 接口上的 2 个螺丝。

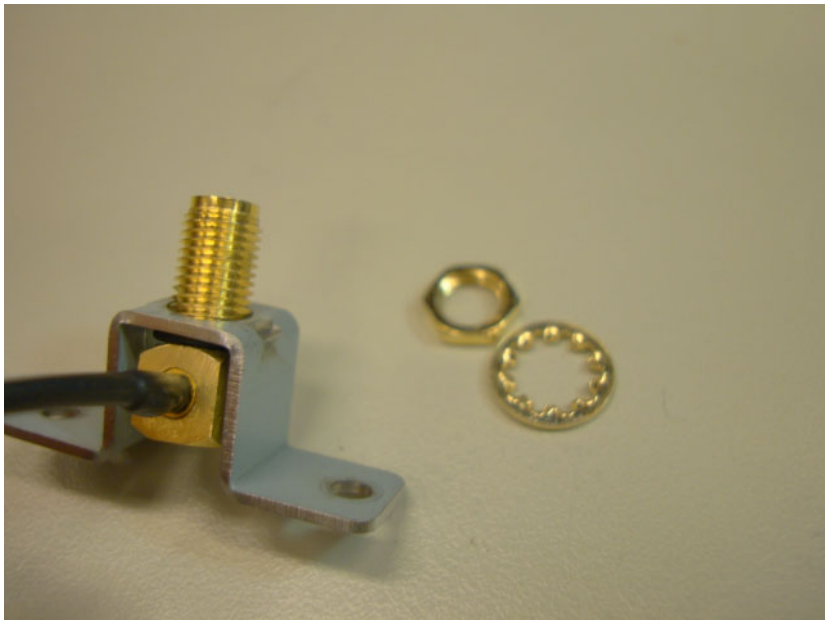
8. 同轴电缆 & 支架。



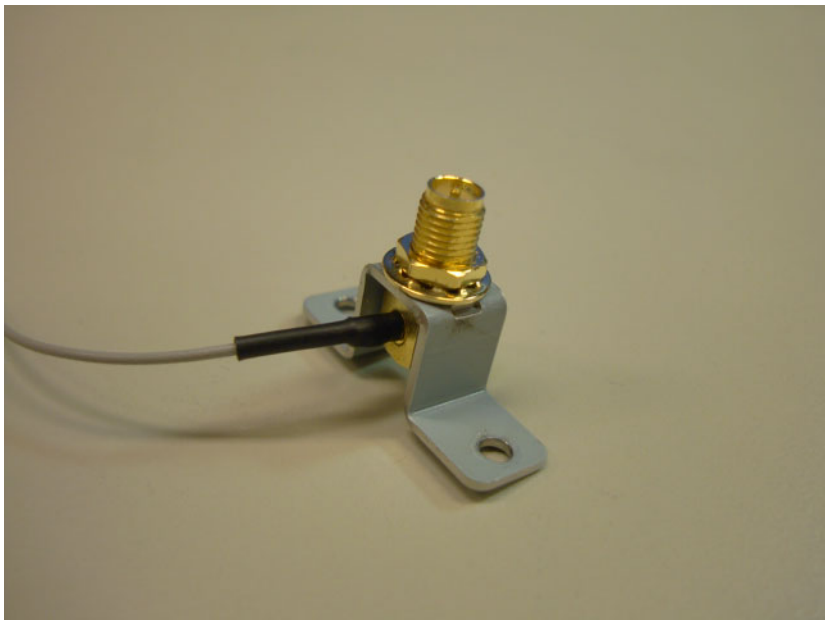
首先将黑色橡胶密封圈放在 SMA 端。



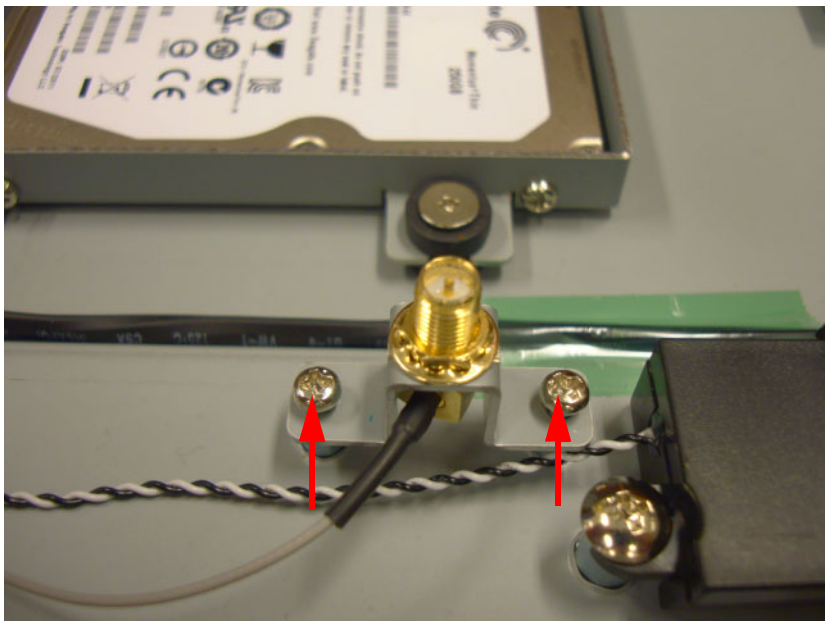
将支架放在 SMA 接口上。



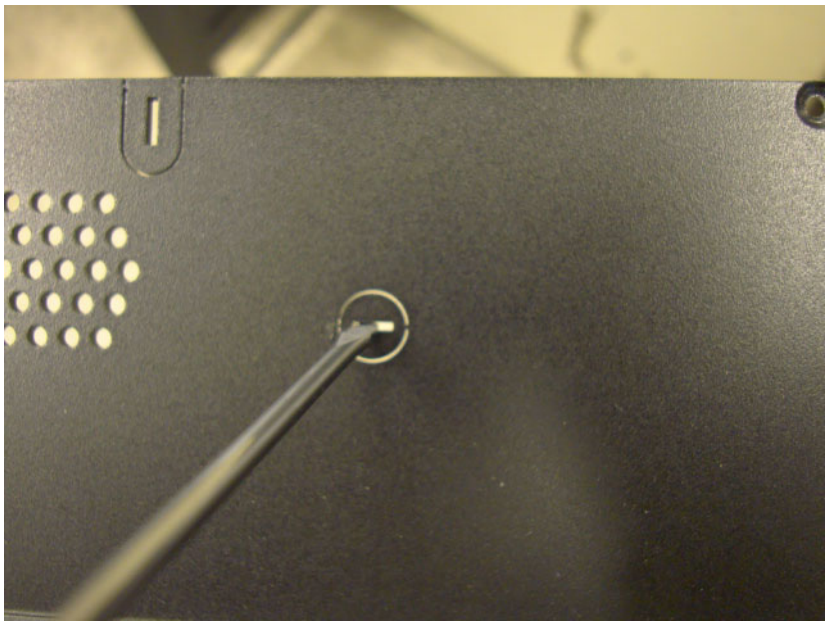
安装垫圈和螺丝并拧紧。



9. 将天线支架放在台面上并固定上面的 2 个螺丝。



10. 用一字螺丝刀卸下后盖 “ 孔盖 ”。



11. 重新固定后盖上的 21 个螺丝。

12. 安装 SMA 接口上的天线。

第 4 章

跳线设置与接口

本章介绍如何设置 UTC-520A/B/C 产品的硬件，包括跳线设置和连接外围设备、开关和指示灯。请在开始安装操作前仔细阅读所有的安全指示。

内容包括：

- 跳线和接口
- 清除 CMOS，用于外部 RTC （J5）
- COM 端口
- VGA 接口
- 配置看门狗定时器

4.1 跳线和接口 （UTC-520A）

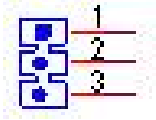
4.1.1 跳线

4.1.1.1 跳线列表

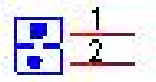
J1	清除 CMOS
J2	自动开启电源设置
J3	LCD 电源
J5	COM2 设置

4.1.1.2 跳线设置

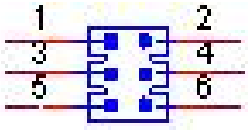
J1	**清除 CMOS**
产品料号	1653003101
Footprint	HD_3x1P_79_D
说明	排针 3x1P 2.0 mm 180D(M) DIP 2000-13 WS
设置	功能
(1-2)*	正常
(2-3)	清除 COMS



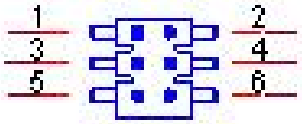
J2	**自动开启电源设置**
产品料号	1653002101
Footprint	HD_2x1P_79_D
说明	排针 2*1P 180D(M)SQUARE 2.0 mm DIP W/O Pb
设置	功能
NC*	电源开关
(1-2)	自动开启电源



J3	**LCD 电源**
产品料号	1653003201
Footprint	HD_3x2P_79_D
说明	排针 3*2P 180D(M) 2.0mm DIP SQUARE WO/Pb
设置	功能
(1-3)	+3.3 V
(3-5)*	+5 V
(3-4)	+12 V

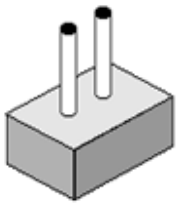


J5	COM2 设置
产品料号	**1653003260**
Footprint	HD_3x2P_79
说明	排针 3x2P 2.0mm 180D(M) SMD 21N22050
设置	功能
(1-2)*	RS232
(3-4)	RS485
(5-6)	RS422

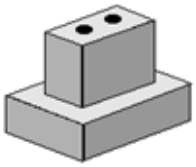


4.1.1.3 跳线设置

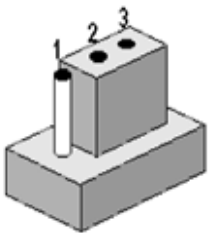
用户可以通过跳线设置来配置母板，从而满足应用需求。跳线是最为简单的一种电子开关。它包括 2 个金属针脚和 1 个跳线帽 （里面是金属夹片，外部是起保护作用的塑料套）。跳线帽可套住针脚将其连成通路。移走跳线帽则会断开线路。有时，一个跳线具有 3 个针脚，分别为针 1、2、3。这种情况下，用户可以任意选择连接针脚 1、2 或者针脚 2、3。



断开

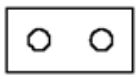


闭合



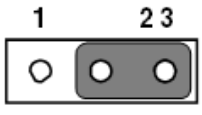
闭合 2-3

跳线设置如下图所示：



断开

闭合



闭合 2-3

设置跳线时，使用针鼻钳子将会很有帮助。如果您对硬件配置存有任何疑问，请在更改设置前联系经销商或销售代表。

警告！ *设置跳线清除 CMOS 之前请务必关闭电源，以免损坏计算机。打开电源前，请将跳线设置为 3.0 V Battery On。*

4.1.2 跳线和接口

表 4.1：接口	
CN1	电源开关
CN2	逆变器电源输出
CN4	SATA 电源
CN6	SATA 2
CN7	RS422/485
CN8	GPIO
CN10	DDR3 SODIMM 插槽
CN12	内置 USB
CN13	SMBus
CN14	RJ45 以太网 x 2
CN17	48 bits LVDS 面板
CN18	外部 USB (1/2)
CN19	外部 USB (3/4)
CN20	HDMI
CN22	12 V 电源输入
CN23	VGA
CN24	音频
CN25	COM1/COM2
CN26	COM3/COM4
CN28	MIOe
CN29	PCIE Mini 卡支架
CN30	PCIE Mini 卡
CN31	CFast

4.1.3 机械

4.1.3.1 跳线和接口的位置

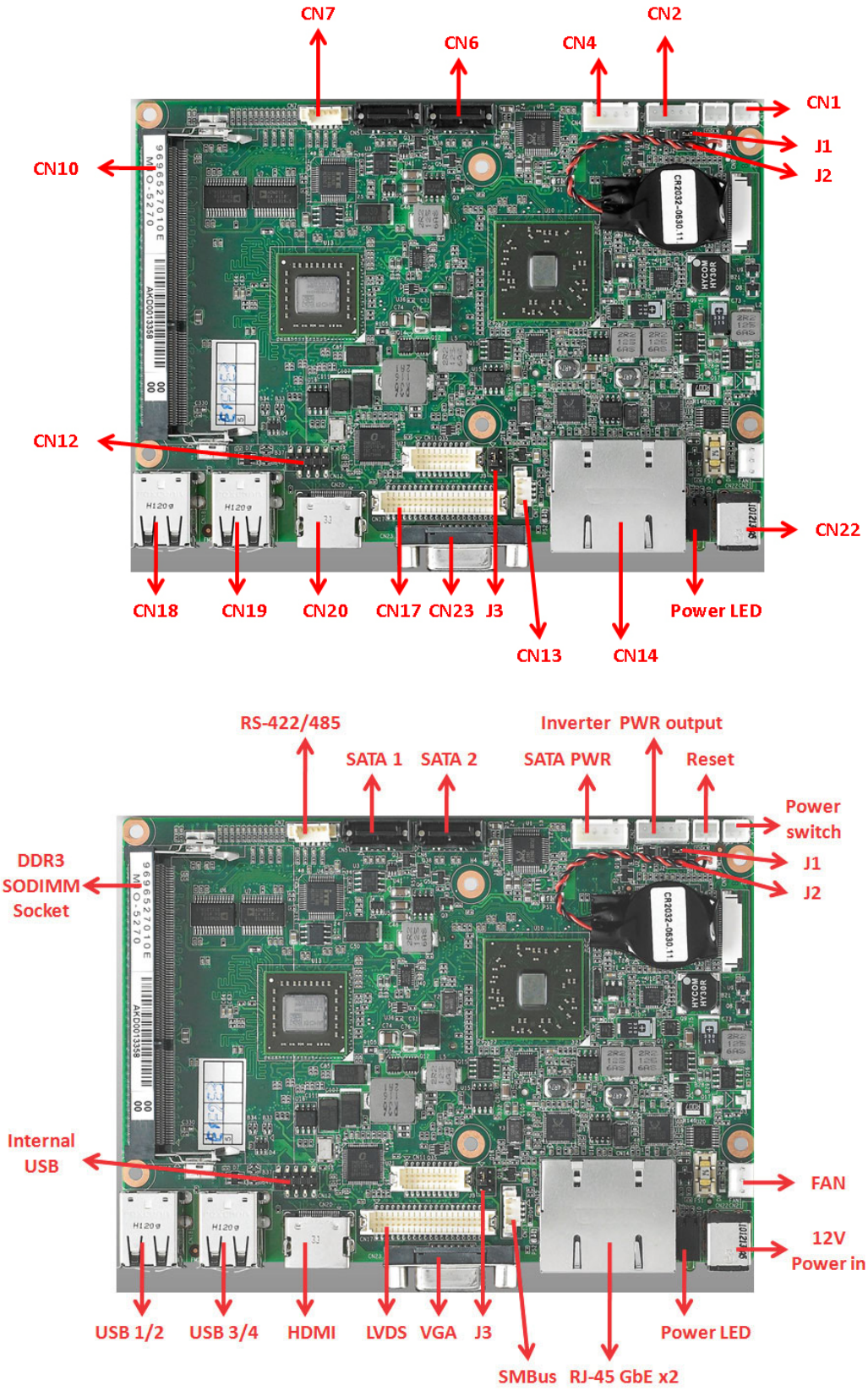


图 4.1 跳线和接口布局 （组件端）

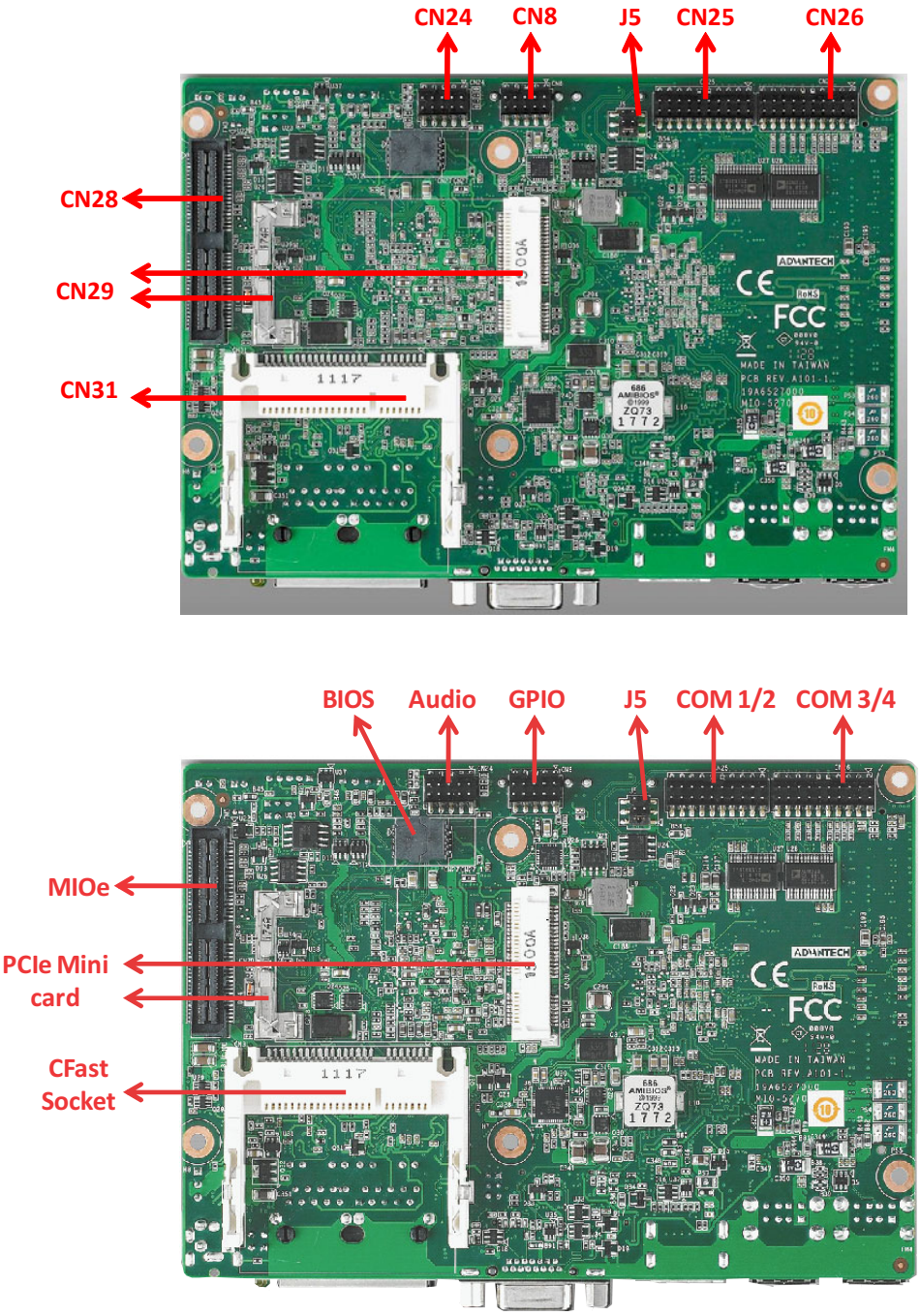


图 4.2 跳线和接口布局 （焊接端）

4.2 跳线和接口 （UTC-520B）

4.2.1 跳线

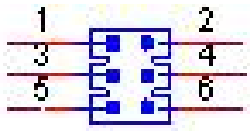
4.2.1.1 跳线列表

表 4.2：跳线

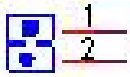
标签	功能
J2	48-bit LVDS2 电源
J3	自动开启电源设置
J4	COM2 设置
J6	清除 CMOS

4.2.1.2 跳线设置

J2	48 bits LVDS2 电源
产品料号	1653003260
Footprint	HD_3x2P_79
说明	排针 3x2P 2.0 mm 180D(M) SMD 21N22050
设置	功能
(1-3)	+3.3 V
(3-5)*	+5 V
(3-4)	+12 V

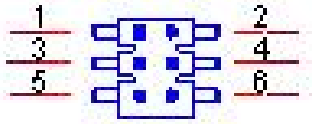


J3	自动开启电源设置
产品料号	1653002101
Footprint	HD_2x1P_79_D
说明	排针 2*1P 180D(M)SQUARE 2.0 mm DIP W/O Pb
设置	功能
NC*	电源开关
(1-2)	自动开启电源

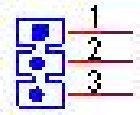


J4	COM2 设置
产品料号	1653003260
Footprint	HD_3x2P_79
说明	排针 3x2P 2.0mm 180D(M) SMD 21N22050
设置	功能

(1-2)*	RS232
(3-4)	RS485
(5-6)	RS422

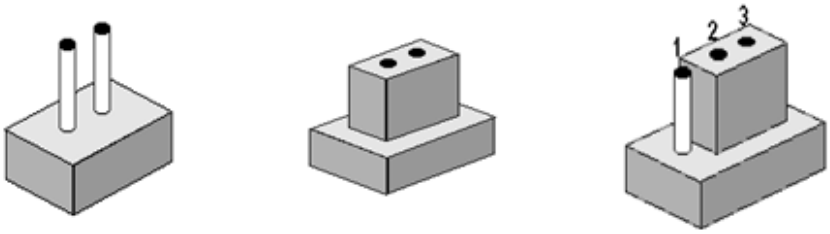


J6	**清除 CMOS**
产品料号	1653003101
Footprint	HD_3x1P_79_D
说明	排针 3x1P 2.0mm 180D(M) DIP 2000-13 WS
设置	功能
(1-2)*	正常
(2-3)	清除 COMS



4.2.1.3 跳线设置

用户可以通过跳线设置来配置母板，从而满足应用需求。跳线是最为简单的一种电子开关。它包括 2 个金属针脚和 1 个跳线帽 （里面是金属夹片，外部是起保护作用的塑料套）。跳线帽可套住针脚将其连成通路。移走跳线帽则会断开线路。有时，一个跳线具有 3 个针脚，分别为针 1、2、3。这种情况下，用户可以任意选择连接针脚 1、2 或者针脚 2、3。



断开　　闭合　　闭合 2-3

跳线设置如下图所示：

断开　　闭合　　闭合 2-3

设置跳线时，使用针鼻钳子将会很有帮助。如果您对硬件配置存有任何疑问，请在更改设置前联系经销商或销售代表。

警告！ *设置跳线清除 CMOS 之前请务必关闭电源，以免损坏计算机。打开电源前，请将跳线设置为 3.0 V Battery On。*

4.2.2 跳线和接口

4.2.2.1 接口列表

表 4.3：接口

标签	功能
CN2	DC JACK
CN3	DDR3 SO-DIMM
CN5	电源开关
CN9	GPIO
CN10	VGA
CN11	CFast
CN12	SIM 支架
CN13	全长 Mini PCIe
CN14	SATA
CN15	SATA 电源
CN16	USB 3/4
CN17	内部 USB
CN18	USB 1/2
CN19	COM1/COM2 RS-232
CN20	RS422/485 1
CN22	RS422/485 2
CN24	COM3/COM4 RS-232
CN25	SMBus
CN28	LAN
CN30	音频
CN34	LVDS2 逆变器电源
CN35	48 bits LVDS2 面板
CN36	HDMI
CN38	LVDS1 逆变器电源

4.2.3 机械

4.2.3.1 跳线和接口的位置

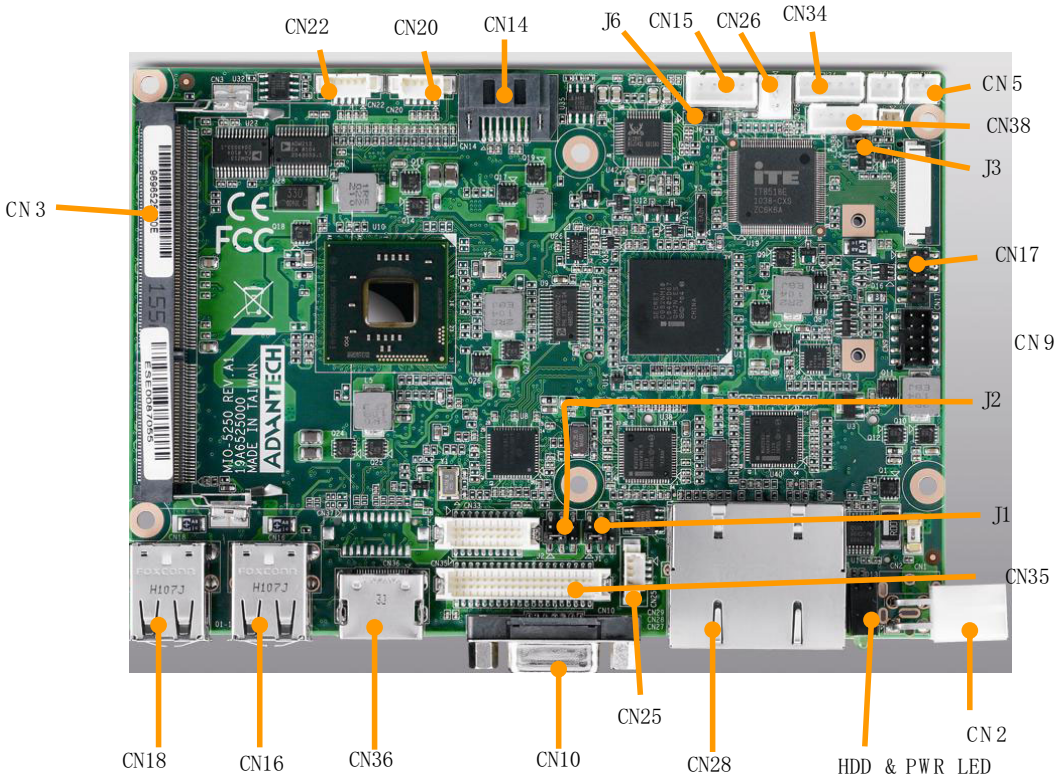


图 4.3 跳线和接口位置 （部件端）

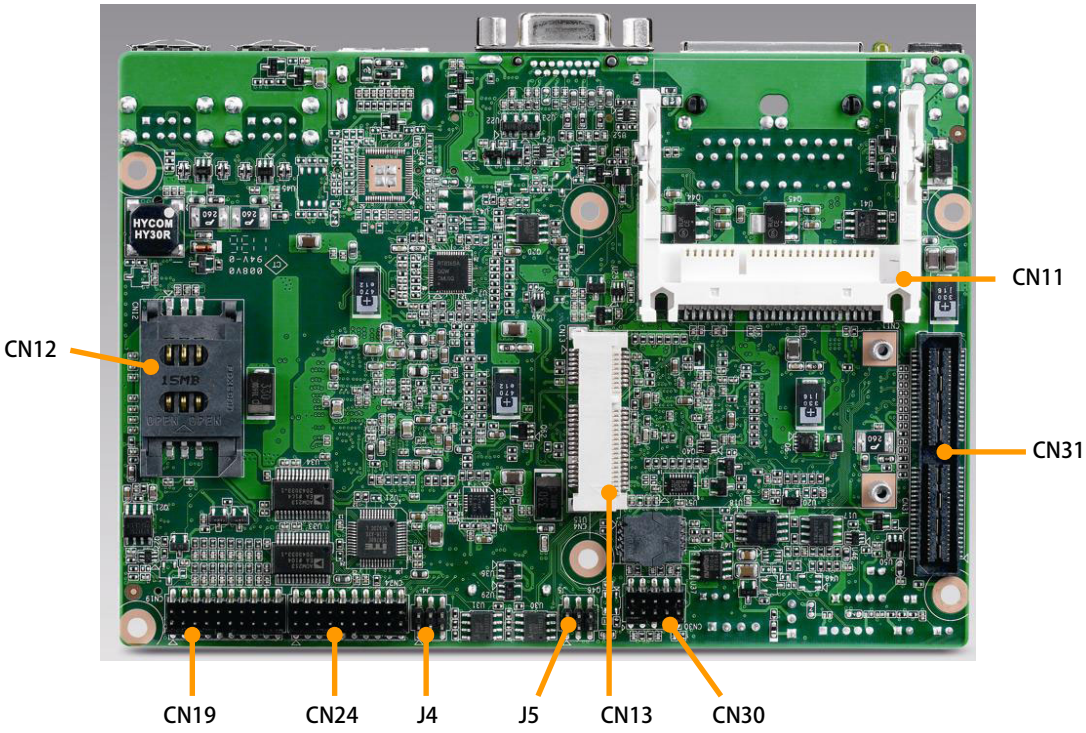


图 4.4 跳线和接口布局 （焊接端）

4.3 跳线和接口 (UTC-520C)

4.3.1 跳线

UTC-520C 带有一些跳线，可供用户根据应用需要进行系统配置。每个跳线的功能如下表所示。

表 4.4：跳线

J1	清除 CMOS
J2	自动开机设置
J3	LCD 电源
J4	DDR3L 选择
J5	COM2 设置

4.3.2 接口

板载接口将 UTC-520C 连接至外部设备，如硬盘、键盘或软驱。每个板载接口的功能如下表所示。

表 4.5：接口

标签	功能
CN1	电源开关
CN2	复位
CN3	反向电源输出
CN4	SMBus
CN5	RS422/485
CN6	SATA 电源
CN7	SATA2
CN8	SATA1
CN9	Audio
CN12	SODIMM-DDR3
CN13	内部 USB
CN14	48 Bit LVDS 面包
CN15	LAN
CN18	12 V 电源输入
CN19	外部 USB2.0 + USB3.0
CN20	外部 USB2.0 + USB3.0
CN21	HDMI + DISPLAY
CN22	DC 插孔
CN23	VGA
CN24	COM1/COM2
CN25	GPIO
CN26	BIOS 插槽
CN27	MIOe
CN28	Mini PCIE/mSATA
CN29	Mini PCIE
FAN1	CPU 风扇
FAN2	系统风扇

4.3.3 接口位置及块状图

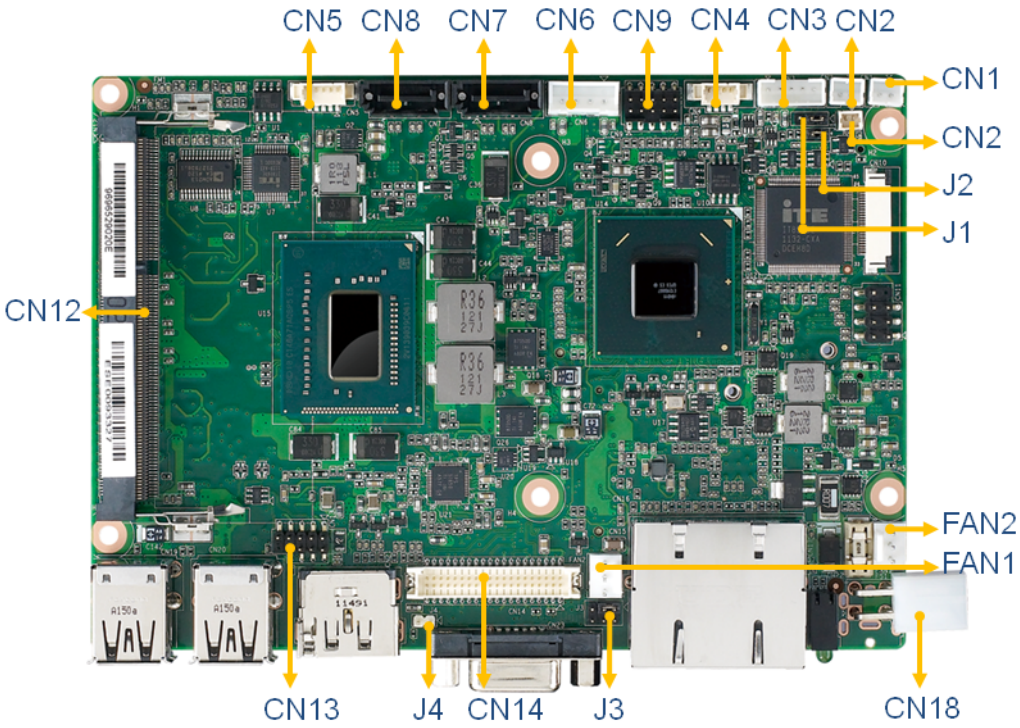


图 4.5 UTC-520C 接口位置 （顶部）

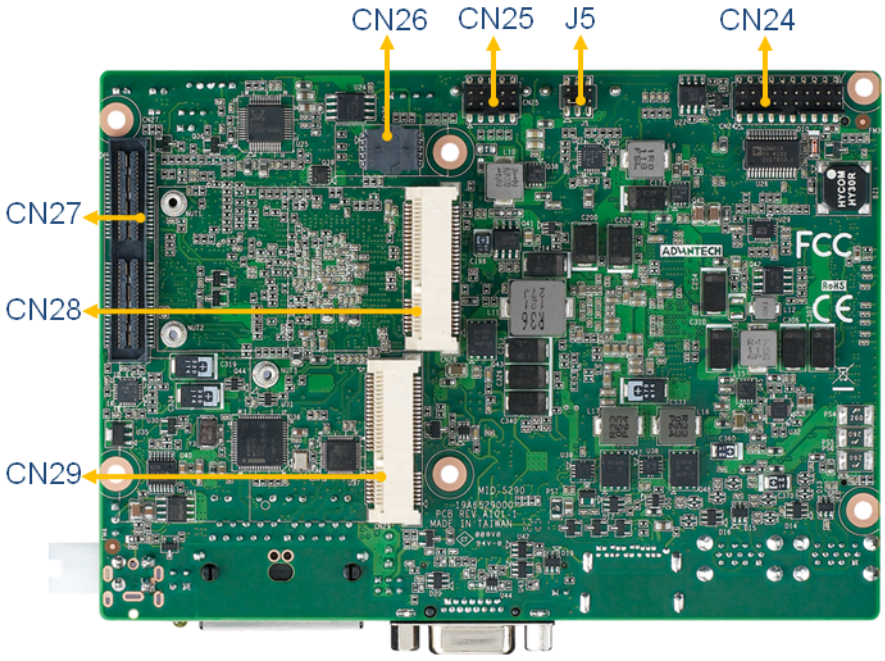


图 4.6 UTC-520C 接口位置 （底部）

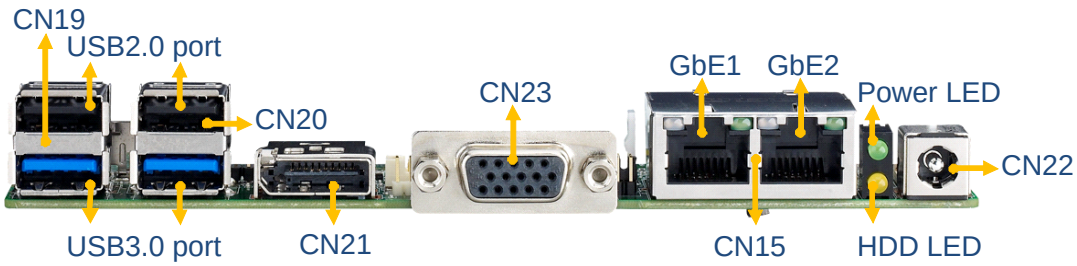
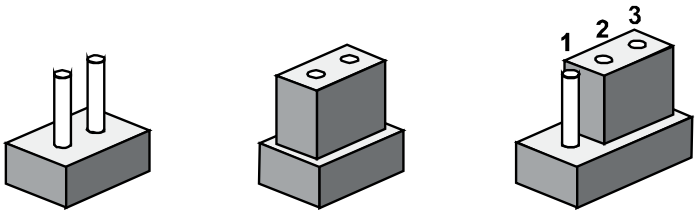


图 4.7 UTC-520C 接口位置 （海岸线）

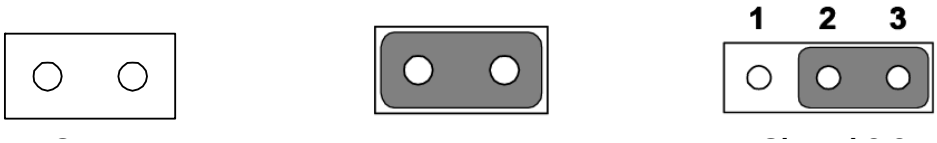
4.3.4 跳线设置

用户可以通过跳线设置来配置母板，从而满足应用需求。跳线是最为简单的一种电子开关。它包括 2 个金属针脚和 1 个跳线帽 （里面是金属夹片，外部是起保护作用的塑料套）。跳线帽可套住针脚将其连成通路。移走跳线帽则会断开线路。有时，一个跳线具有 3 个针脚，分别为针 1、2、3。这种情况下，用户可以任意选择连接针脚 1、2 或者针脚 2、3。



断开　　闭合　　闭合 2-3

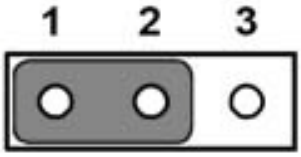
跳线设置如下图所示：



断开　　闭合　　闭合 2-3

设置跳线时，使用针鼻钳子将会很有帮助。如果您对硬件配置存有任何疑问，请在更改设置前联系经销商或销售代表。

4.3.4.1 清除 CMOS (J1)



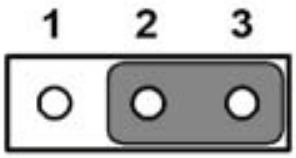
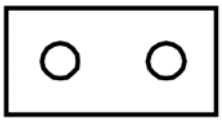


表 4.6：清除 CMOS (JP1)

设置	功能
(1-2)*	正常 （默认）
(2-3)	清除 CMOS

4.3.4.2 自动开机设置 (J2)



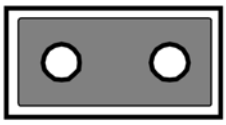
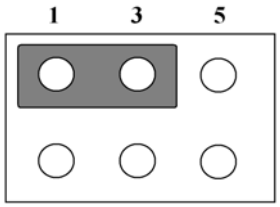
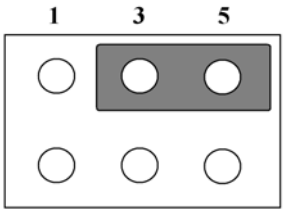


表 4.7：自动开机设置 (J2)

设置	功能
NC	开机电源按钮
(1-2)*	自动开机 （默认）

4.3.4.3 LCD Power (J3)





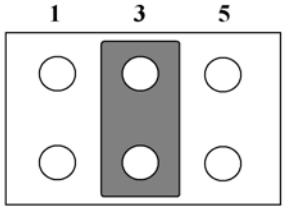
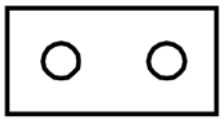


表 4.8：LCD 电源 (J3)

设置	功能
(1-3)*	+3.3 V （默认）
(3-5)	+5 V
(3-4)	+12 V

4.3.4.4 LVDS 面板电源选择 (J4)



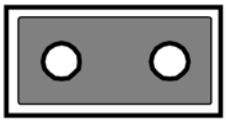
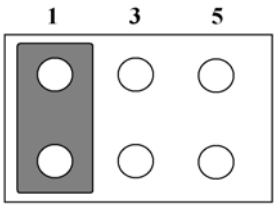
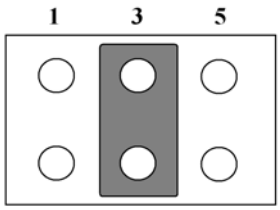


表 4.9：LVDS 面板电源选择 (J4)

设置	功能
(Open)*	标准 DDR3 为 1.5 V （默认）
Close	DDR3L 为 1.35 V

4.3.4.5 COM2 设置 (J5)





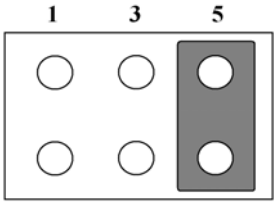


表 4.10：COM2 设置 (J5)

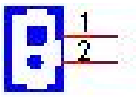
设置	功能
(1-2)*	RS232 （默认）
(3-4)	RS485
(5-6)	RS422

附录 A

I/O 针脚定义

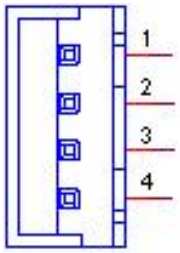
A.1 针脚定义 （UTC-520A）

CN1	电源开关
产品料号	1655302020
Footprint	WF_2P_79_BOX_R1_D
说明	晶圆盒 2P 2.0mm 180D(M) DIP A2001WV2-2P
针脚	针脚名
1	PSIN
2	GND

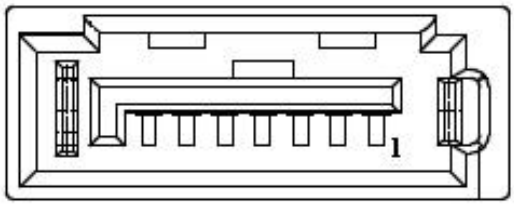


CN2	逆变器电源输出
产品料号	1655000453
Footprint	WHL5V-2M-24W1140
说明	晶圆盒 2.0mm 5P 180D(M) DIP WO/Pb JIH VEI
针脚	针脚名
1	+12 V
2	GND
3	ENABKL
4	VBR
5	+5 V

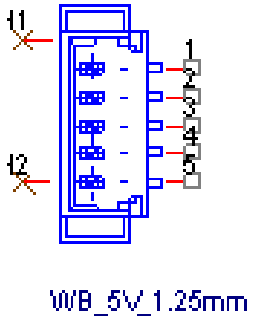
CN4	SATA 电源
产品料号	1655001154
Footprint	WF_4P_98_BOX_R1_D
说明	晶圆盒 4P 2.50mm 180D(M) DIP 24W1170-04S10-01
针脚	针脚名
1	+5 V
2	GND
3	GND
4	+12 V



CN6	SATA 2
产品料号	1654007578
Footprint	SATA_7P_WATF-07DBN6SB1U
说明	串行 ATA 7P 1.27mm 180D(M) SMD WATF-07DBN6SB1U
针脚	针脚名
1	GND
2	TX+
3	TX-
4	GND
5	RX-
6	RX+
7	GND

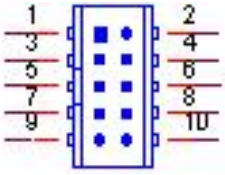


CN7	RS422/485
产品料号	1655304032
Footprint	WF_5P_49_BOX_85205
说明	晶圆 5P 1.25mm 180D(M) SMD 85205-05701
针脚	针脚名
1	422RX-
2	422RX+
3	422/485TX+
4	422/485TX-
5	GND

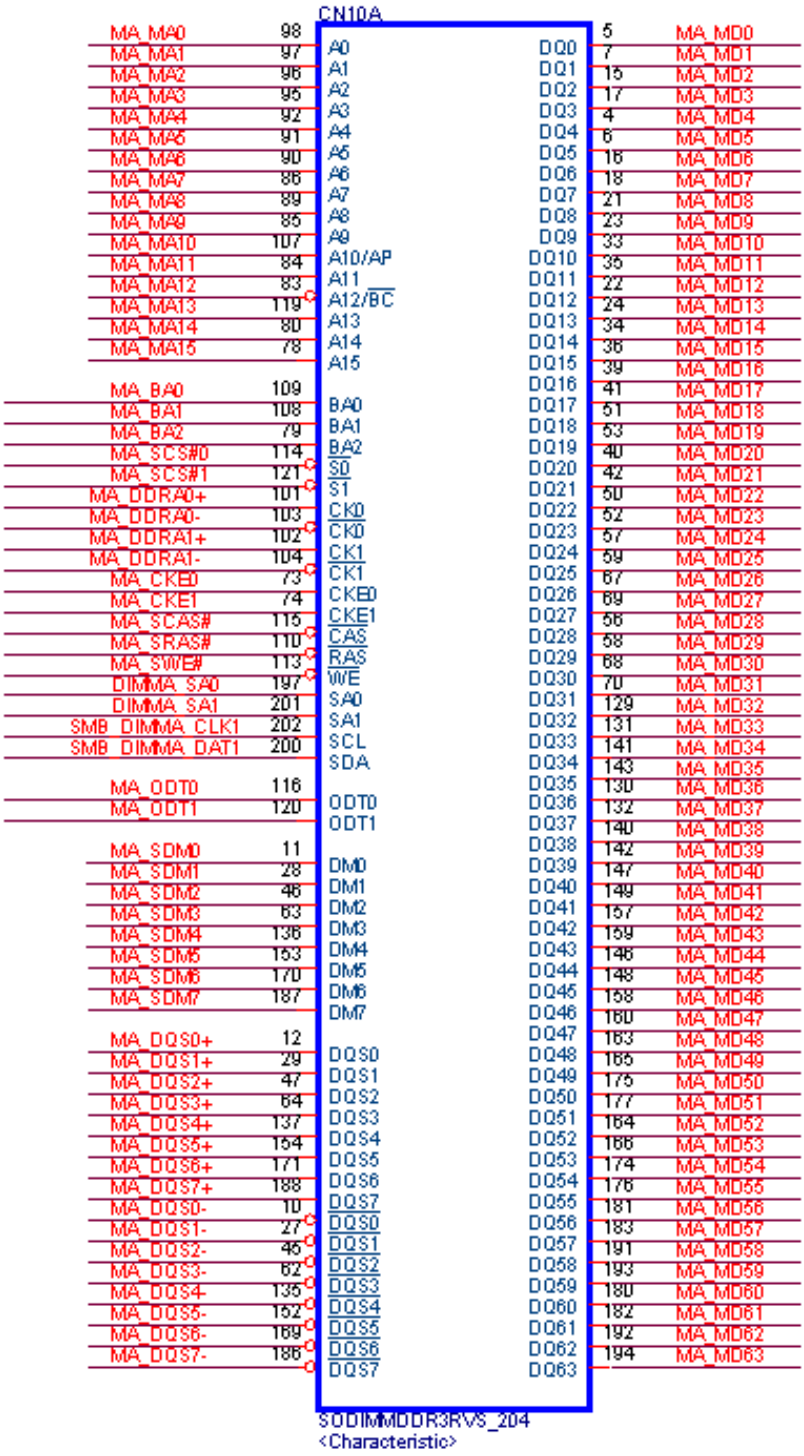


WB_5V_1.25mm

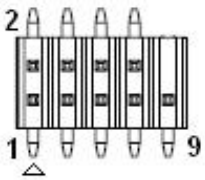
CN8	GPIO
产品料号	1653004099
Footprint	HD_5x2P_79_23N685B-10M10
说明	简牛 5x2P 2.00mm 180D(M) SMD 23N685B-10M10
针脚	针脚名
1	+5 V
2	GPIO4
3	GPIO0
4	GPIO5
5	GPIO1
6	GPIO6
7	GPIO2
8	GPIO7
9	GPIO3
10	GND



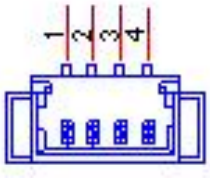
CN10	DDR3 SODIMM 插槽
产品料号	1651001648
Footprint	DDR3_204P_2-2013311-1
说明	DDR3 SODIMM H=9.2mm 204P SMD 2-2013311-1
针脚	针脚名



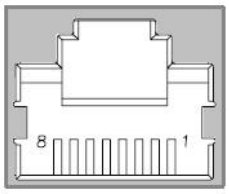
CN12	内部 USB
产品料号	1653005260
Footprint	HD_5x2P_79_N10
说明	排针 2x5P 2.0mm 180D(M) SMD 21N22050
针脚	针脚名
1	+5 V
2	+5 V
3	A_D-
4	B_D-
5	A_D+
6	B_D+
7	GND
8	GND
9	GND



CN13	SMBus
产品料号	1655904020
Footprint	FPC4V-125M
说明	简牛 4P 1.25mm 180D(M) SMD 85205-04001
针脚	针脚名
1	GND
2	SMB_DAT
3	SMB_CLK
4	+5 V

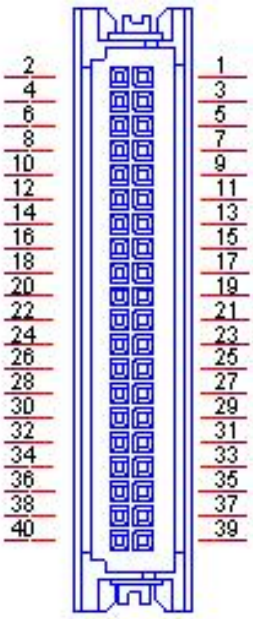


CN14	LAN
产品料号	1652003274
Footprint	RJ45_28P_RTB-19GB9J1A
说明	声孔 RJ45 28P DIP RTB-19GB9J1A
针脚	针脚名
1	TX+(10/100),BI_DA+(GHz)
2	TX-(10/100),BI_DA-(GHz)
3	RX+(10/100),BI_DB+(GHz)
4	BI_DC+(GHz)
5	BI_DC-(GHz)
6	RX-(10/100),BI_DB-(GHz)
7	BI_DD+(GHz)
8	BI_DD-(GHz)

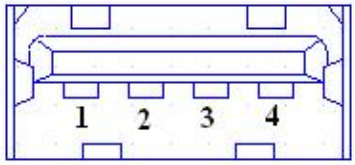


CN17	48 Bit LVDS 面板
产品料号	1653920200
Footprint	SPH20X2
说明	B/B Conn. 40P 1.25mm 90D SMD DF13-40DP-1.25V
针脚	针脚名
1	+3.3 V、+5 V 或 +12 V
2	+3.3 V、+5 V 或 +12 V
3	GND
4	GND
5	+3.3 V、+5 V 或 +12 V
6	+3.3 V、+5 V 或 +12 V
7	LVDS0_D0-
8	LVDS1_D0-
9	LVDS0_D0+
10	LVDS1_D0+
11	GND
12	GND
13	LVDS0_D1-
14	LVDS1_D1-
15	LVDS0_D1+
16	LVDS1_D1+
17	GND
18	GND
19	LVDS0_D2-

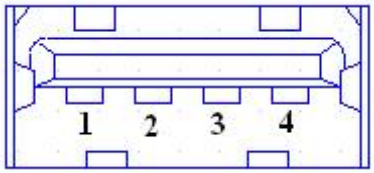
20	LVDS1_D2-
21	LVDS0_D2+
22	LVDS1_D2+
23	GND
24	GND
25	LVDS0_CLK-
26	LVDS1_CLK-
27	LVDS0_CLK+
28	LVDS1_CLK+
29	GND
30	GND
31	NC
32	NC
33	GND
34	GND
35	LVDS0_D3-
36	LVDS1_D3-
37	LVDS0_D3+
38	LVDS1_D3+
39	NC
40	NC



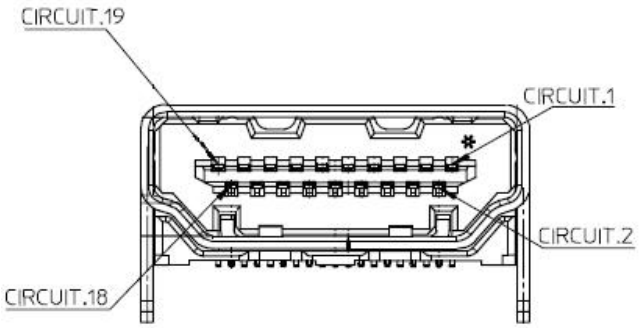
CN18	外部 USB
产品料号	1654009513
Footprint	USB_8P_UB1112C-8FDE-4F
说明	
针脚	针脚名
1	+5 V
2	D-
3	D+
4	GND



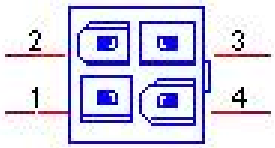
CN19	外部 USB
产品料号	1654009513
Footprint	USB_8P_UB1112C-8FDE-4F
说明	
针脚	针脚名
1	+5 V
2	D-
3	D+
4	GND



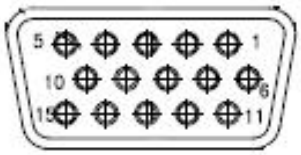
CN20	HDMI
产品料号	1654009225
Footprint	HDMI_19P_QJ51193-FFD4-7F
说明	HDMI 接口 19P 0.5mm 90D(M) SMD QJ51193-FFB4-7F
针脚	针脚名
1	TMDS Data2+
2	TMDS Data2 Shield
3	TMDS Data2 -
4	TMDS Data1+
5	TMDS Data1 Shield
6	TMDS Data1 -
7	TMDS Data0+
8	TMDS Data0 Shield
9	TMDS Data0 -
10	TMDS Clock+
11	TMDS Clock Shield
12	TMDS Clock -
13	Reserved
14	Reserved
15	SCL
16	SDA
17	DDC 接地
18	+5 V 电源
19	热插拔检测



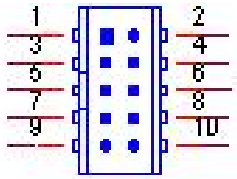
CN22	12V 电源输入
产品料号	1655404090
Footprint	WF_2x2P_165_BOX_RA_D_740SP
说明	ATX 电源接口 2x2P 4.2mm 180D(M) DIP 24W4310-04S
针脚	针脚名
1	GND
2	GND
3	+12 V
4	+12 V



CN23	VGA
产品料号	1654000055
Footprint	DBVGA-VF5MS
说明	D-SUB Conn. 15P 90D(F) DIP 070242FR015S200ZU
针脚	针脚名
1	RED
2	GREEN
3	BLUE
4	NC
5	GND
6	GND
7	GND
8	GND
9	NC
10	GND
11	NC
12	DDAT
13	HSYNC
14	VSYNC
15	DCLK

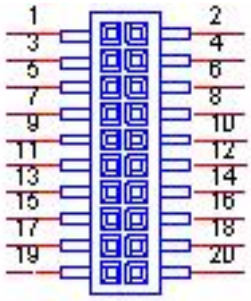


CN24	音频
产品料号	1653004099
Footprint	HD_5x2P_79_23N685B-10M10
说明	简牛 5x2P 2.00mm 180D(M) SMD 23N685B-10M10
针脚	针脚名
1	LOUTR
2	LINR
3	GND
4	GND
5	LOUTL
6	LINL
7	GND
8	GND
9	MIC1R
10	MIC1L

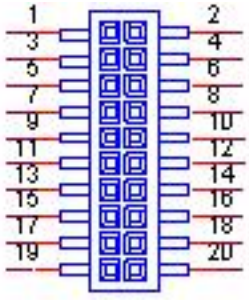


CN25	COM1/COM2
产品料号	1653004793
Footprint	HD_10x2P_79_23N685B-20M10
说明	
针脚	针脚名
1	DCD1#
2	DSR1#
3	RXD1
4	RTS1#
5	TXD1
6	CTS1#
7	DTR1#
8	RI1#
9	GND
10	GND
11	DCD2#
12	DSR2#
13	RXD2
14	RTS2#
15	TXD2
16	CTS2#
17	DTR2#
18	RI2#

19	GND
20	GND

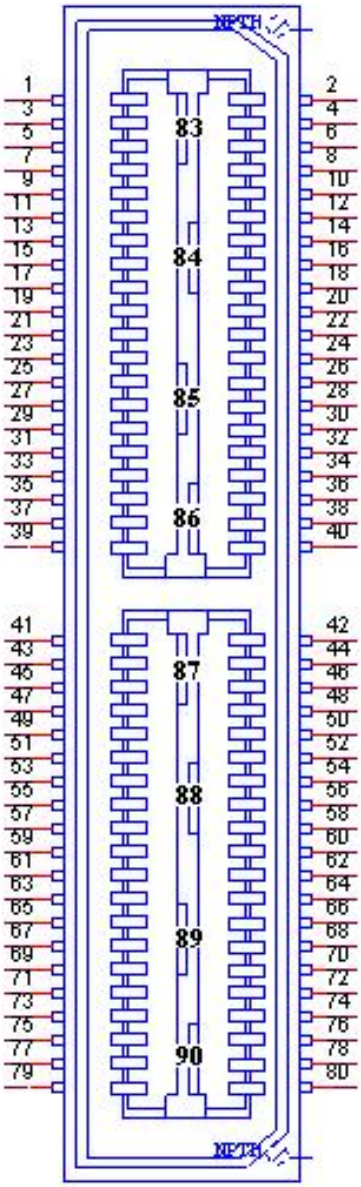


CN26	**COM3/COM4**
产品料号	1653004793
Footprint	HD_10x2P_79_23N685B-20M10
说明	
针脚	针脚名
1	DCD3#
2	DSR3#
3	RXD3
4	RTS3#
5	TXD3
6	CTS3#
7	DTR3#
8	RI3#
9	GND
10	GND
11	DCD4#
12	DSR4#
13	RXD4
14	RTS4#
15	TXD4
16	CTS4#
17	DTR4#
18	RI4#
19	GND
20	GND



CN28	MIOe
产品料号	1654006235
Footprint	BB_40x2P_32_1625x285_2HOLD
说明	
针脚	针脚名
1	GND
2	GND
3	PCIE_RX0+
4	PCIE_TX0+
5	PCIE_RX0-
6	PCIE_TX0-
7	GND
8	GND
9	PCIE_RX1+
10	PCIE_TX1+
11	PCIE_RX1-
12	PCIE_TX1-
13	GND
14	GND
15	PCIE_RX2+
16	PCIE_TX2+
17	PCIE_RX2-
18	PCIE_TX2-
19	GND
20	GND
21	PCIE_RX3+
22	PCIE_TX3+
23	PCIE_RX3-
24	PCIE_TX3-
25	GND
26	GND
27	PCIE_CLK+
28	LOUTL
29	PCIE_CLK-
30	LOUTR
31	GND
32	AGND
33	SMB_CLK
34	NC
35	SMB_DAT
36	NC
37	PCIE_WAKE#
38	NC
39	RESET#
40	NC
41	SLP_S3#

42	CLK33M
43	SLP_S5#
44	LPC_AD0
45	DDP_HPD
46	LPC_AD1
47	GND
48	LPC_AD2
49	DDP_AUX+
50	LPC_AD3
51	DDP_AUX-
52	LPC_DRQ#0
53	GND
54	LPC_SERIRQ
55	DDP_D0+
56	LPC_FRAME#
57	DDP_D0-
58	GND
59	GND
60	USB0_D+
61	DDP_D1+
62	USB0_D-
63	DDP_D1-
64	GND
65	GND
66	USB1_D+/USB_SSTX+
67	DDP_D2+
68	USB1_D-/USB_SSTX-
69	DDP_D2-
70	GND
71	GND
72	USB2_D+/USB_SSRX+
73	DDP_D3+
74	USB2_D-/USB_SSRX-
75	DDP_D3-
76	GND
77	GND
78	USB_OC#
79	+12VSB
80	NC
83	GND
84	GND
85	GND
86	GND
87	+5VSB
88	+5VSB
89	+5VSB
90	+5VSB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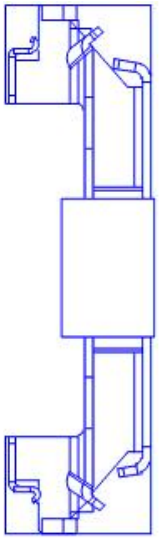
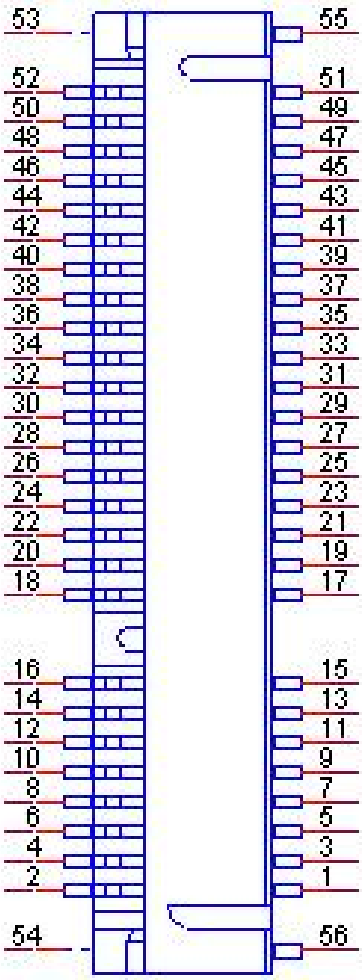
CN29	PCIe Mini 卡支架
产品料号	1654002539
Footprint	FOX_ASOB226-S68K7F_HOLDER
说明	MINI PCI Express 52P 6.8mm 90D SMD ASOB226-S68K7
针脚	针脚名
1	GND
2	GND
3	GND
4	GND
5	NC
6	NC



CN30	PCIe Mini 卡
产品料号	1654002538
Footprint	FOX_ASOB226-S68K7F
说明	MINI PCI Express 52P 6.8mm 90D SMD ASOB226-S68N7
针脚	针脚名
1	WAKE#
2	+3.3 VSB
3	NC
4	GND
5	NC
6	+1.5 V
7	NC
8	NC
9	GND
10	NC
11	REFCLK-
12	NC
13	REFCLK+

14	NC
15	GND
16	NC
17	NC
18	GND
19	NC
20	NC
21	GND
22	PERST#
23	PERn0
24	+3.3 VSB
25	PERp0
26	GND
27	GND
28	+1.5 V
29	GND
30	SMB_CLK
31	PETn0
32	SMB_DAT
33	PETp0
34	GND
35	GND
36	USB D-
37	GND
38	USB D+
39	+3.3 VSB
40	GND
41	+3.3 VSB
42	NC
43	GND
44	NC
45	NC
46	NC
47	NC
48	+1.5V
49	NC
50	GND
51	NC
52	+3.3 VSB
53	NC
54	NC
55	GND
56	GND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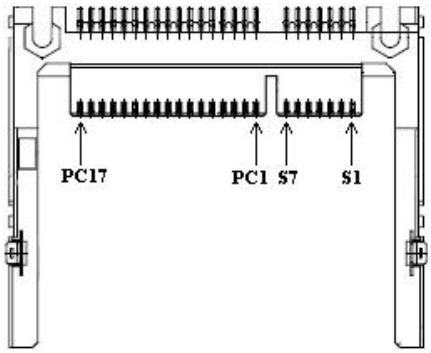
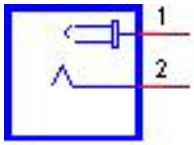
CN31	CFast
产品料号	1653004402
Footprint	CFAST_24P_N7E24
说明	CFast 24P 1.27mm 90D(M) SMD N7E24-M516RA-50
针脚	针脚名
PC1	CDI
PC2	GND
PC3	NC
PC4	NC
PC5	NC
PC6	NC
PC7	GND
PC8	NC
PC9	NC
PC10	NC
PC11	NC
PC12	NC
PC13	+3.3 V
PC14	+3.3 V
PC15	GND
PC16	GND
PC17	CDO
S1	GND
S2	TX+
S3	TX-
S4	GND
S5	RX-
S6	RX+
S7	GND



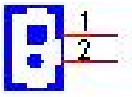
A.2 针脚定义 （UTC-520B）

CN2	DC JACK
产品料号	1652005624
Footprint	PJ_2P_2DC-G213B200
说明	DC POWER JACK 2.5mm 90D(M) DIP 2DC-G213B200
针脚	针脚名
1	+VIN
2	GND



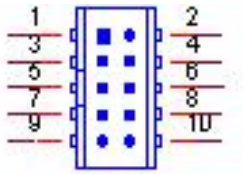
CN3	SODIMMDDR3RVS_204
产品料号	1651001648
Footprint	DDR3_204P_2-2013311-1
说明	DDR3 SODIMM H=9.2mm 204P SMD 2-2013311-1
针脚	针脚名

CN5	电源开关
产品料号	1655302020
Footprint	WF_2P_79_BOX_R1_D
说明	晶圆盒 2P 2.0mm 180D(M) DIP A2001WV2-2P
针脚	针脚名
1	PSIN
2	GND

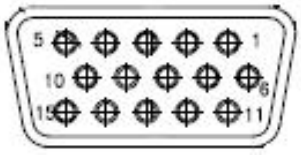


CN9	GPIO
产品料号	1653004099
Footprint	HD_5x2P_79_23N685B-10M10
说明	简牛 5x2P 2.00mm 180D(M) SMD 23N685B-10M10
针脚	针脚名
1	+5 V
2	GPIO4
3	GPIO0
4	GPIO5
5	GPIO1
6	GPIO6

7	GPIO2
8	GPIO7
9	GPIO3
10	GND

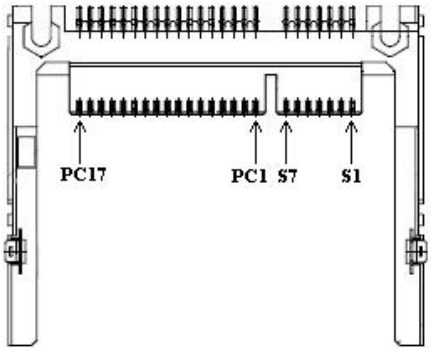


CN10	**VGA**
产品料号	1654000055
Footprint	DBVGA-VF5MS
说明	D-SUB 接口 15P 90D(F) DIP 070242FR015S200ZU
针脚	针脚名
1	RED
2	GREEN
3	BLUE
4	NC
5	GND
6	GND
7	GND
8	GND
9	NC
10	GND
11	NC
12	DDAT
13	HSYNC
14	VSYNC
15	DCLK

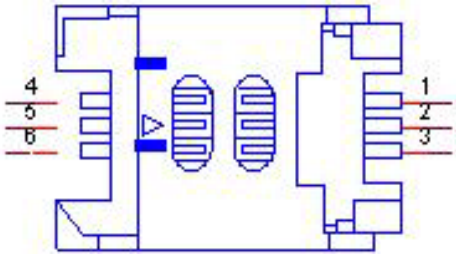


CN11	**CFast**
产品料号	1653004849
Footprint	CFAST_24P_N7G24
说明	CFast 24P 1.27mm 90D(M) SMD N7G24-A0B2RA-10-0HT-
针脚	针脚名
PC1	CDI
PC2	GND

PC3	NC
PC4	NC
PC5	NC
PC6	NC
PC7	GND
PC8	NC
PC9	NC
PC10	NC
PC11	NC
PC12	NC
PC13	+3.3 V
PC14	+3.3 V
PC15	GND
PC16	GND
PC17	CDO
S1	GND
S2	TX+
S3	TX-
S4	GND
S5	RX-
S6	RX+
S7	GND

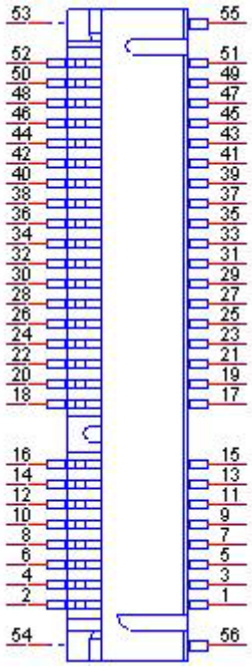


CN12	**SIM**
产品料号	1654000639
Footprint	SIM-WL608C
说明	SIM 卡接口 6p 90D(F)SMD WO/Pb WL608C3-M04-7F
针脚	针脚名
1	UIM_PWR
2	UIM_RESET
3	UIM_CLK
4	GND
5	UIM_VPP
6	UIM_DATA

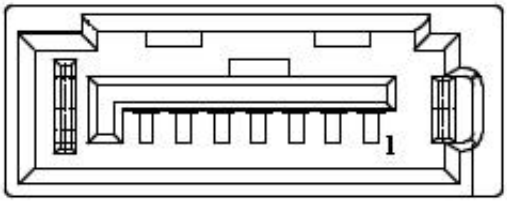


CN13	Mini PCIE
产品料号	1654006715
Footprint	MINIPCI_52P_88911-5204M
说明	
针脚	针脚名
1	WAKE#
2	+3.3 VSB
3	NC
4	GND
5	NC
6	+1.5 V
7	NC
8	NC
9	GND
10	NC
11	REFCLK-
12	NC
13	REFCLK+
14	NC
15	GND
16	NC
17	NC
18	GND
19	NC
20	NC
21	GND
22	PERST#
23	PERn0
24	+3.3 VSB
25	PERp0
26	GND
27	GND
28	+1.5 V
29	GND
30	SMB_CLK
31	PETn0
32	SMB_DAT
33	PETp0
34	GND
35	GND

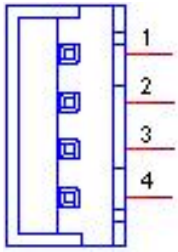
36	USB D-
37	GND
38	USB D+
39	+3.3 VSB
40	GND
41	+3.3 VSB
42	NC
43	GND
44	NC
45	NC
46	NC
47	NC
48	+1.5 V
49	NC
50	GND
51	NC
52	+3.3 VSB
H3	GND
H4	GND
H5	NC
H6	NC



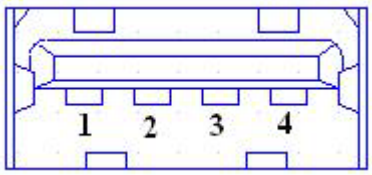
CN14	SATA
产品料号	1654004118
Footprint	SATA_7P_50_WATA-07DPLH4U
说明	串行 ATA 7P 1.27mm 90D(M) SMD WATA-07DPLH4U
针脚	针脚名
1	GND
2	TX+
3	TX-
4	GND
5	RX-
6	RX+
7	GND



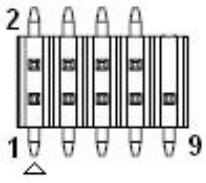
CN15	SATA 电源
产品料号	1655001154
Footprint	WF_4P_98_BOX_R1_D
说明	晶圆盒 4P 2.50mm 180D(M) DIP 24W1170-04S10-01
针脚	针脚名
1	+5 V
2	GND
3	GND
4	+12 V



CN16	USB3/4
产品料号	1654009513
Footprint	USB_8P_UB1112C-8FDE-4F
说明	USB 接口 8P 2.0mm 90D DIP UB1112C-8FDE-4F
针脚	针脚名
1	+5 V
2	D-
3	D+
4	GND

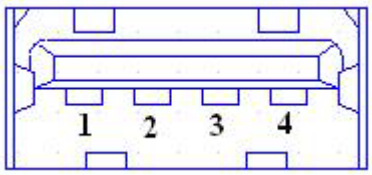


CN17	内部 USB
产品料号	1653005260
Footprint	HD_5x2P_79_N10
说明	排针 2x5P 2.0mm 180D(M) SMD 21N22050
针脚	针脚名
1	+5 V
2	+5 V
3	A_D-
4	B_D-
5	A_D+
6	B_D+
7	GND
8	GND
9	GND

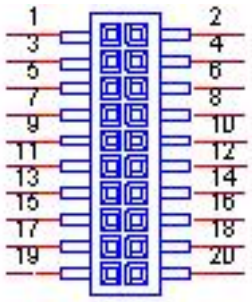


匹配电缆：1703100260　1703100121

CN18	USB 1/2
产品料号	1654009513
Footprint	USB_8P_UB1112C-8FDE-4F
说明	USB 接口 8P 2.0mm 90D DIP UB1112C-8FDE-4F
针脚	针脚名
1	+5 V
2	D-
3	D+
4	GND

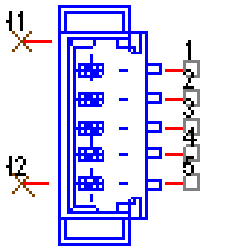


CN19	COM1/COM2 RS-232
产品料号	1653004793
Footprint	HD_10x2P_79_23N685B-20M10
说明	简牛 10x2P 2.0mm 180D(M)SMD 23N685B-20M10B
针脚	针脚名
1	DCD1#
2	DSR1#
3	RXD1
4	RTS1#
5	TXD1
6	CTS1#
7	DTR1#
8	RI1#
9	GND
10	GND
11	DCD2#
12	DSR2#
13	RXD2
14	RTS2#
15	TXD2
16	CTS2#
17	DTR2#
18	RI2#
19	GND
20	GND



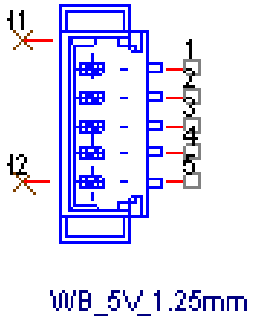
匹配电缆：1701200220

CN20	RS422/485 1
产品料号	1655304032
Footprint	WF_5P_49_BOX_85205
说明	晶圆 5P 1.25mm 180D(M) SMD 85205-05701
针脚	针脚名
1	422RX-
2	422RX+
3	422/485TX+
4	422/485TX-
5	GND



WB_5V_1.25mm

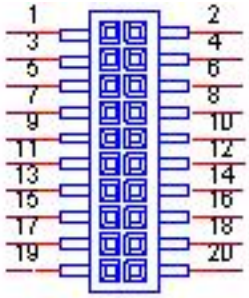
CN22	RS422/485 2
产品料号	1655304032
Footprint	WF_5P_49_BOX_85205
说明	晶圆 5P 1.25mm 180D(M) SMD 85205-05701
针脚	针脚名
1	422RX-
2	422RX+
3	422/485TX+
4	422/485TX-
5	GND



WB_5V_1.25mm

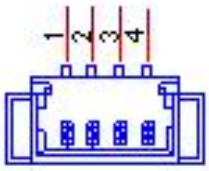
CN24	COM3/COM4 RS-232
产品料号	1653004793
Footprint	HD_10x2P_79_23N685B-20M10
说明	简牛 10x2P 2.0mm 180D(M)SMD 23N685B-20M10B
针脚	针脚名
1	DCD3#
2	DSR3#
3	RXD3
4	RTS3#
5	TXD3
6	CTS3#
7	DTR3#
8	RI3#
9	GND
10	GND
11	DCD4#
12	DSR4#
13	RXD4
14	RTS4#
15	TXD4
16	CTS4#
17	DTR4#
18	RI4#
19	GND

20	GND

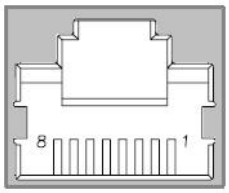


Matching Cable: 1701200220

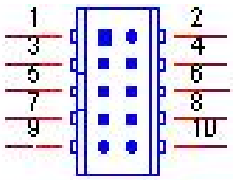
CN25	**SMBus**
产品料号	1655904020
Footprint	FPC4V-125M
说明	晶圆 4P 1.25mm 180D(M) SMD 85205-04001
针脚	针脚名
1	GND
2	SMB_DAT
3	SMB_CLK
4	+5V



CN14	LAN
产品料号	1652003274
Footprint	RJ45_28P_RTB-19GB9J1A
说明	声孔 RJ45 28P DIP RTB-19GB9J1A
针脚	针脚名
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)

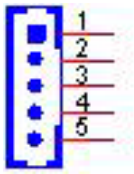


CN30	Audio
产品料号	1653004099
Footprint	HD_5x2P_79_23N685B-10M10
说明	简牛 5x2P 2.00mm 180D(M) SMD 23N685B-10M10
针脚	针脚名
1	LOUTR
2	LINR
3	GND
4	GND
5	LOUTL
6	LINL
7	GND
8	GND
9	MIC1R
10	MIC1L



匹配电缆：1703100152

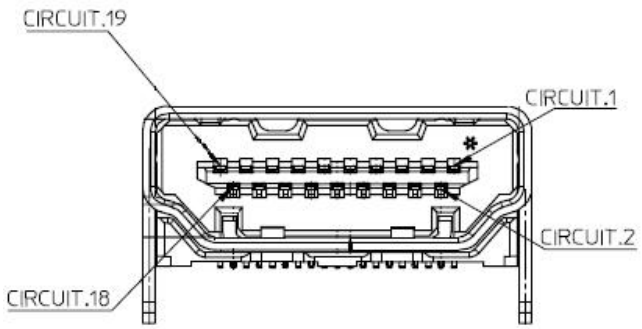
CN34	48 bits LVDS2 逆变器电源
产品料号	1655000453
Footprint	WHL5V-2M-24W1140
说明	晶圆盒 2.0mm 5P 180D(M) DIP WO/Pb JIH VEI
针脚	针脚名
1	+12V
2	GND
3	ENABKL
4	VBR
5	+5V



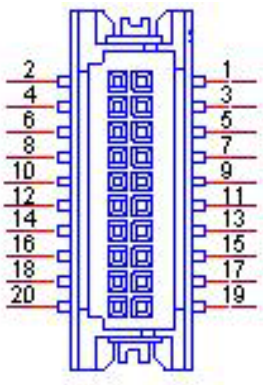
CN35	48 Bit LVDS2 面板
产品料号	1653920200
Footprint	SPH20X2
说明	B/B 接口 40P 1.25mm 90D SMD DF13-40DP-1.25V(91)
针脚	针脚名
1	+5V or +3.3V
2	+5V or +3.3V
3	GND
4	GND
5	+5V or +3.3V
6	+5V or +3.3V
7	LVDS0_D0-
8	LVDS1_D0-
9	LVDS0_D0+
10	LVDS1_D0+
11	GND
12	GND
13	LVDS0_D1-
14	LVDS1_D1-
15	LVDS0_D1+
16	LVDS1_D1+
17	GND
18	GND
19	LVDS0_D2-
20	LVDS1_D2-
21	LVDS0_D2+
22	LVDS1_D2+
23	GND
24	GND

25	LVDS0_CLK-
26	LVDS1_CLK-
27	LVDS0_CLK+
28	LVDS1_CLK+
29	GND
30	GND
31	NC
32	NC
33	GND
34	GND
35	LVDS0_D3-
36	LVDS1_D3-
37	LVDS0_D3+
38	LVDS1_D3+
39	NC
40	NC

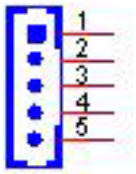
CN36	**HDMI**
产品料号	1654009225
Footprint	HDMI_19P_QJ51193-FFD4-7F
说明	HDMI 接口 19P 0.5mm 90D(M) SMD QJ51193-FFB4-7F
针脚	针脚名
1	TMDS Data2+
2	TMDS Data2 Shield
3	TMDS Data2 -
4	TMDS Data1+
5	TMDS Data1 Shield
6	TMDS Data1 -
7	TMDS Data0+
8	TMDS Data0 Shield
9	TMDS Data0 -
10	TMDS Clock+
11	TMDS Clock Shield
12	TMDS Clock -
13	Reserved
14	Reserved
15	SCL
16	SDA
17	DDC Ground
18	+5V Power
19	Hot Plug Detect



CN37	eDP
产品料号	1653910261
Footprint	SPH10X2
说明	B/B 接口 10x2P 1.25mm 180D(M)SMD DF13-20DP-1.25V
针脚	针脚名
1	GND
2	GND
3	D0-
4	D3-
5	D0+
6	D3+
7	GND
8	NC
9	D1-
10	GND
11	D1+
12	SDAT
13	GND
14	SCLK
15	D2-
16	GND
17	D2+
18	Hot Plug Detect
19	+5V or +3.3V
20	+5V or +3.3V



CN38	24 Bit LVDS1 反向电源
产品料号	1655000453
Footprint	WHL5V-2M-24W1140
说明	晶圆盒 2.0mm 5P 180D(M) DIP WO/Pb JIH VEI
针脚	针脚名
1	+12 V
2	GND
3	ENABKL
4	VBR
5	+5 V



A.3 针脚定义 （UTC-520C）

J1	清除 CMOS
产品料号	1653003101
Footprint	HD_3x1P_79_D
说明	针脚 HEADER 3*1P 180D(M) 2.0mm DIP SQUARE W/O Pb
设置	功能
(1-2)*	Normal
(2-3)	Clear COMS

J2	自动开机设置
产品料号	1653002101
Footprint	HD_2x1P_79_D
说明	针脚 HEADER 2*1P 180D(M)SQUARE 2.0mm DIP W/O Pb
设置	功能
NC	开机电源按钮

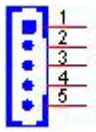
J3	LCD 电源
产品料号	1653003201
Footprint	HD_3x2P_79_D
说明	排针 3*2P 180D(M) 2.0mm DIP SQUARE WO/Pb
设置	功能
(1-3)*	+3.3V
(3-5)	+5V
(3-4)	+12V

J4	DDR3L SEL
产品料号	1653000125
Footprint	HD_2x1P_79_H224_D
说明	
设置	功能
(1-2)*	DDR3L

J5	COM2 设置
产品料号	1653003260
Footprint	HD_3x2P_79
说明	排针 3*2P 180D(M) 2.0mm SMD 源针脚
设置	功能
(1-2)*	RS232
(3-4)	RS485
(5-6)	RS422

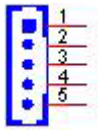
CN1	电源开关
产品料号	1655302020
Footprint	WF_2P_79_BOX_R1_D
说明	晶圆盒 2P 180D(M) 2.0mm，带锁
针脚	针脚名
1	PSIN
2	GND

CN2	Reset
产品料号	1655302020
Footprint	WF_2P_79_BOX_R1_D
说明	晶圆盒 2P 180D(M) 2.0mm W/Lock
针脚	针脚名
1	RESET#
2	GND

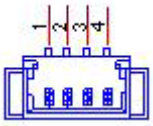


CN3	Inverter Power Output
产品料号	1655000453
Footprint	WHL5V-2M-24W1140

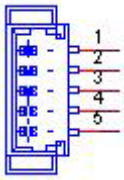
说明	晶圆盒 2.0mm 5P 180D(M) DIP WO/Pb JIH VEI
针脚	针脚名
1	+12V
2	GND
3	ENABKL
4	VBR
5	+5V



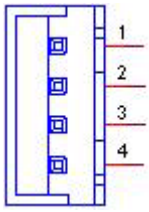
CN4	**SMBus**
产品料号	1655904020
Footprint	FPC4V-125M
说明	晶圆 SMT 1.25mmS/T type 4P 180D(M) 85205-04001
针脚	针脚名
1	GND
2	SMB_DAT
3	SMB_CLK
4	+5V



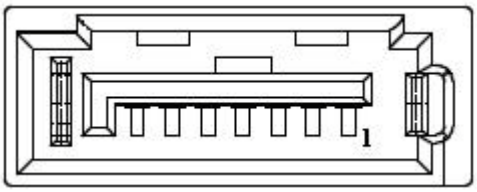
CN5	**RS422/485**
产品料号	1655004032
Footprint	WF_5P_49_BOX_85205
说明	
针脚	针脚名
1	422RX-
2	422RX+
3	422/485TX+
4	422/485TX-
5	GND



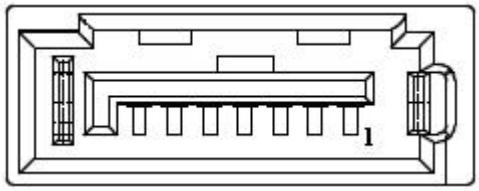
CN6	SATA Power
产品料号	1655001154
Footprint	WF_4P_98_BOX_R1_D
说明	
针脚	针脚名
1	+5V
2	GND
3	GND
4	+12V



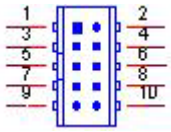
CN7	SATA2
产品料号	1654007578
Footprint	SATA_7P_WATF-07DBN6SB1U
说明	
针脚	针脚名
1	GND
2	TX+
3	TX-
4	GND
5	RX-
6	RX+
7	GND



CN8	SATA1
产品料号	1654007578
Footprint	SATA_7P_WATF-07DBN6SB1U
说明	
针脚	针脚名
1	GND
2	TX+
3	TX-
4	GND
5	RX-
6	RX+
7	GND



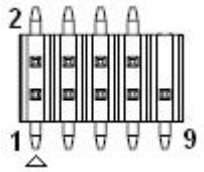
CN9	音频
产品料号	1653004099
Footprint	HD_5x2P_79_23N685B-10M10
说明	
针脚	针脚名
1	LOUTR
2	LINR
3	GND
4	GND
5	LOUTL
6	LINL
7	GND
8	GND
9	MIC1R
10	MIC1L



匹配电缆：1703100152

CN12	SODIMMDDR3_204
产品料号	1651001649
Footprint	DDR3_204P_2-2013310-1
说明	
针脚	针脚名

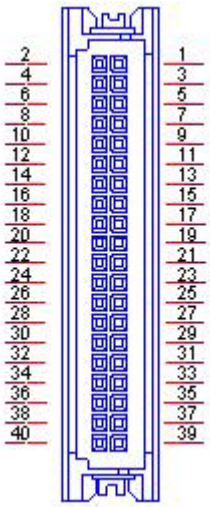
CN13	内部 USB
产品料号	1653005260
Footprint	HD_5x2P_79_N10
说明	排针 2*5P 180D(M) 2.0mm SMD IDIOT-PROOF
针脚	针脚名
1	+5V
2	+5V
3	A_D-
4	B_D-
5	A_D+
6	B_D+
7	GND
8	GND
9	GND



Matching Cable: 1703100260 1703100121

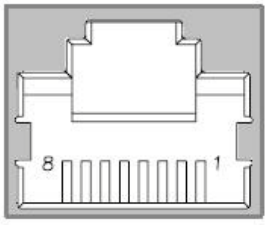
CN14	48 Bit LVDS 面板
产品料号	1653920200
Footprint	SPH20X2
说明	接口 40P 90D 1.25mm SMD WO/Pb DF13-40DP-1.25V
针脚	针脚名
1	+5V 或 +3.3V
2	+5V 或 +3.3V
3	GND
4	GND
5	+5V 或 +3.3V
6	+5V 或 +3.3V
7	LVDS0_D0-
8	LVDS1_D0-
9	LVDS0_D0+
10	LVDS1_D0+
11	GND
12	GND

13	LVDS0_D1-
14	LVDS1_D1-
15	LVDS0_D1+
16	LVDS1_D1+
17	GND
18	GND
19	LVDS0_D2-
20	LVDS1_D2-
21	LVDS0_D2+
22	LVDS1_D2+
23	GND
24	GND
25	LVDS0_CLK-
26	LVDS1_CLK-
27	LVDS0_CLK+
28	LVDS1_CLK+
29	GND
30	GND
31	NC
32	NC
33	GND
34	GND
35	LVDS0_D3-
36	LVDS1_D3-
37	LVDS0_D3+
38	LVDS1_D3+
39	NC
40	NC

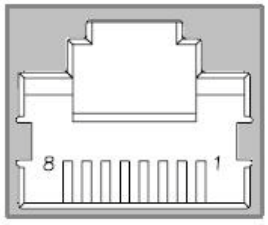


CN15	LAN1/LAN2
产品料号	1652003274
Footprint	RJ45_28P_RTB-19GB9J1A
说明	声孔 RJ45 28P DIP Gold flash RTB-19GB9J1A
针脚	针脚名
1	TX+(10/100),BI_DA+(GHz)
2	TX-(10/100),BI_DA-(GHz)
3	RX+(10/100),BI_DB+(GHz)
4	BI_DC+(GHz)
5	BI_DC-(GHz)
6	RX-(10/100),BI_DB-(GHz)
7	BI_DD+(GHz)
8	BI_DD-(GHz)

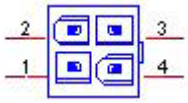
LAN1



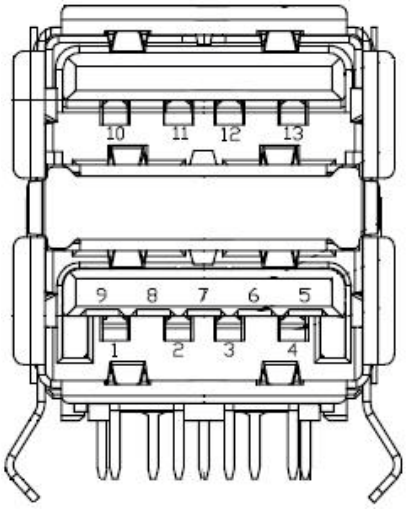
LAN2



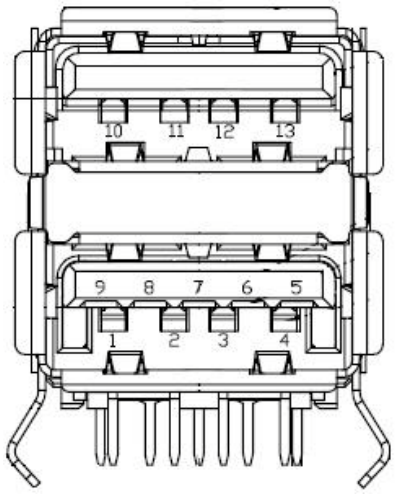
CN18	12V 电源输入
产品料号	1655404090
Footprint	WF_2x2P_165_BOX_RA_D_740SP
说明	ATX 电源接口 2*2P 180D 4.2mm 24W4310-04S10-01T
针脚	针脚名
1	GND
2	GND
3	+12V
4	+12V



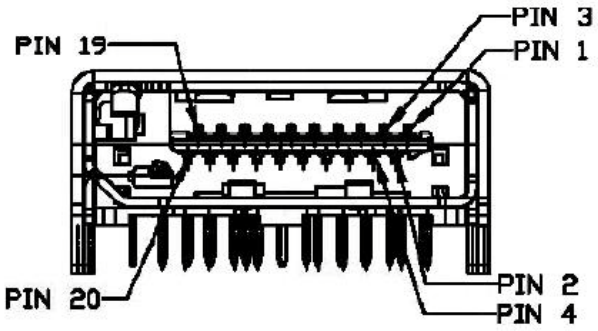
CN19	外部 USB2.0+USB3.0
产品料号	1654010199
Footprint	USB_13P_UEA1112C-UHS6-4F
说明	
针脚	针脚名
1	+5V
2	D-
3	D+
4	GND
5	SSRX-
6	SSRX+
7	GND
8	SSTX-
9	SSTX+
10	+5V
11	D-
12	D+
13	GND



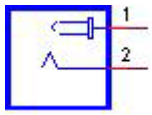
CN20	外部 USB2.0+USB3.0
产品料号	1654010199
Footprint	USB_13P_UEA1112C-UHS6-4F
说明	
针脚	针脚名
1	+5V
2	D-
3	D+
4	GND
5	SSRX-
6	SSRX+
7	GND
8	SSTX-
9	SSTX+
10	+5V
11	D-
12	D+
13	GND



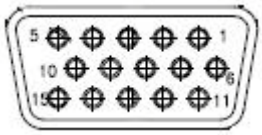
CN21	**HDMI+DISPLAY_21H**
产品料号	1654010203
Footprint	HDMICON_21P_845-002-217CRL
说明	
针脚	针脚名



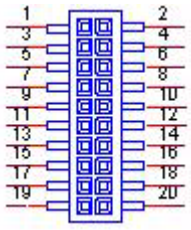
CN22	**DC JACK**
产品料号	1652005624
Footprint	PJ_2P_2DC-G213B200
说明	
针脚	针脚名
1	+VIN
2	GND



CN23	VGA
产品料号	1654000055
Footprint	DBVGA-VF5MS
说明	D-SUB Conn. 15P 90D(F) DIP 070242FR015S200ZU
针脚	针脚名
1	RED
2	GREEN
3	BLUE
4	NC
5	GND
6	GND
7	GND
8	GND
9	NC
10	GND
11	NC
12	DDAT
13	HSYNC
14	VSYNC
15	DCLK

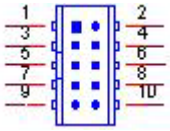


CN24	COM1/COM2
产品料号	1653004793
Footprint	HD_10x2P_79_23N685B-20M10
说明	
针脚	针脚名
1	DCD1#
2	DSR1#
3	RXD1
4	RTS1#
5	TXD1
6	CTS1#
7	DTR1#
8	RI1#
9	GND
10	GND
11	DCD2#
12	DSR2#
13	RXD2
14	RTS2#
15	TXD2
16	CTS2#
17	DTR2#
18	RI2#
19	GND
20	GND

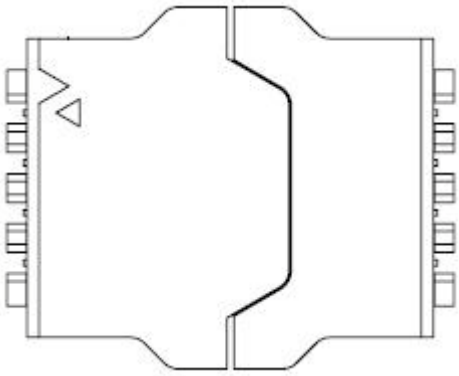


匹配电缆：1701200220

CN25	GPIO
产品料号	1653004099
Footprint	HD_5x2P_79_23N685B-10M10
说明	
针脚	针脚名
1	+5V
2	GPIO4
3	GPIO0
4	GPIO5
5	GPIO1
6	GPIO6
7	GPIO2
8	GPIO7
9	GPIO3
10	GND

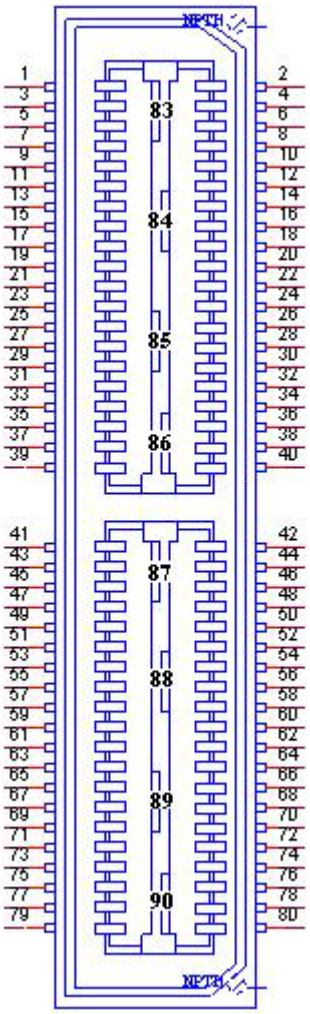


CN26	BIOS 插槽
产品料号	1651000682
Footprint	SOCKET_8P_ACA-SPI-004-K01
说明	IC SKT 8P SMD WO/Pb C ACA-SPI-004-K01
针脚	针脚名
1	CE#
2	SO
3	WP#
4	GND
5	SI
6	SCK
7	HOLD#
8	+3.3V



CN27	MIOe
产品料号	1654006235
Footprint	BB_40x2P_32_1625x285_2HOLD
说明	
针脚	针脚名
1	GND
2	GND
3	PCIE_RX0+
4	PCIE_TX0+
5	PCIE_RX0-
6	PCIE_TX0-
7	GND
8	GND
9	PCIE_RX1+
10	PCIE_TX1+
11	PCIE_RX1-
12	PCIE_TX1-
13	GND
14	GND
15	PCIE_RX2+
16	PCIE_TX2+
17	PCIE_RX2-
18	PCIE_TX2-
19	GND
20	GND
21	PCIE_RX3+
22	PCIE_TX3+
23	PCIE_RX3-
24	PCIE_TX3-
25	GND
26	GND
27	PCIE_CLK+
28	LOUTL
29	PCIE_CLK-
30	LOUTR
31	GND
32	AGND
33	SMB_CLK
34	NC
35	SMB_DAT
36	NC
37	PCIE_WAKE#
38	NC
39	RESET#
40	NC
41	SLP_S3#
42	CLK33M

43	NC
44	LPC_AD0
45	DDP_HPD
46	LPC_AD1
47	GND
48	LPC_AD2
49	DDP_AUX+
50	LPC_AD3
51	DDP_AUX-
52	LPC_DRQ#0
53	GND
54	LPC_SERIRQ
55	DDP_D0+
56	LPC_FRAME#
57	DDP_D0-
58	GND
59	GND
60	USB0_D+
61	DDP_D1+
62	USB0_D-
63	DDP_D1-
64	GND
65	GND
66	USB1_D+/USB_SSTX+
67	DDP_D2+
68	USB1_D-/USB_SSTX-
69	DDP_D2-
70	GND
71	GND
72	USB2_D+/USB_SSRX+
73	DDP_D3+
74	USB2_D-/USB_SSRX-
75	DDP_D3-
76	GND
77	GND
78	USB_OC#
79	+12VSB
80	+12VSB
83	GND
84	GND
85	GND
86	GND
87	+5VSB
88	+5VSB
89	+5VSB
90	+5VSB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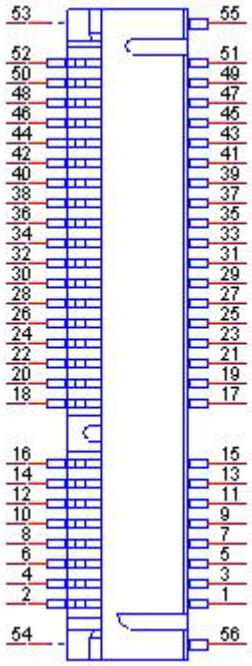
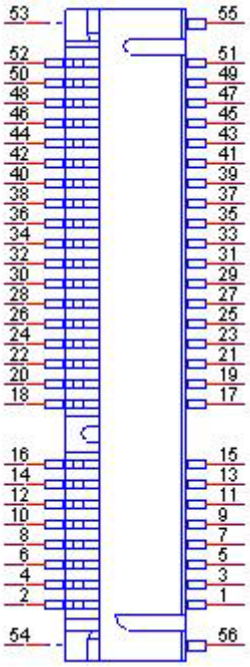
CN28	Mini PCIE
产品料号	1654006715
Footprint	MINIPCIE_FULL_HALF_STANDARD
说明	
针脚	针脚名
1	WAKE#
2	+3.3VSB
3	NC
4	GND
5	NC
6	+1.5V
7	NC
8	UIM_PWR
9	GND
10	UIM_DATA
11	REFCLK-
12	UIM_CLK
13	REFCLK+
14	UIM_RESET
15	GND
16	UIM_VPP
17	NC
18	GND
19	NC
20	NC
21	GND
22	PERST#
23	PERn0
24	+3.3VSB
25	PERp0
26	GND
27	GND
28	+1.5V
29	GND
30	SMB_CLK
31	PETn0
32	SMB_DAT
33	PETp0
34	GND
35	GND
36	USB D-
37	GND
38	USB D+
39	+3.3VSB
40	GND
41	+3.3VSB
42	NC

43	GND
44	NC
45	NC
46	NC
47	NC
48	+1.5V
49	NC
50	GND
51	NC
52	+3.3VSB

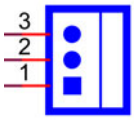


CN29	Mini PCIE
产品料号	1654006715
Footprint	MINIPCIE_FULL_HALF_STANDARD
说明	
针脚	针脚名
1	WAKE#
2	+3.3VSB
3	NC
4	GND
5	NC
6	+1.5V
7	NC
8	UIM_PWR
9	GND
10	UIM_DATA
11	REFCLK-
12	UIM_CLK
13	REFCLK+
14	UIM_RESET
15	GND
16	UIM_VPP
17	NC
18	GND
19	NC
20	NC
21	GND
22	PERST#
23	PERn0
24	+3.3VSB
25	PERp0
26	GND
27	GND
28	+1.5V
29	GND
30	SMB_CLK
31	PETn0
32	SMB_DAT
33	PETp0
34	GND
35	GND
36	USB D-
37	GND
38	USB D+
39	+3.3VSB
40	GND
41	+3.3VSB
42	NC

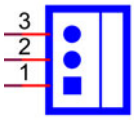
43	GND
44	NC
45	NC
46	NC
47	NC
48	+1.5V
49	NC
50	GND
51	NC
52	+3.3VSB



FAN1	CPU FAN
产品料号	1655003010
Footprint	WHP3VA
说明	
针脚	针脚名
1	GND
2	+V12
3	FANTACH



FAN2	系统风扇
产品料号	1655003010
Footprint	WHP3VA
说明	
针脚	针脚名
1	GND
2	+V12
3	N/C



附录 B

UTC-500 外围系列安装指导

B.1 UTC-500 外围系列安装指导

型号	说明
UTC-P01-A0E	适用于 UTC-500 系列的 2 M 摄像机模块
UTC-P02-A0E	适用于 UTC-500 系列的磁条卡读取器
UTC-P03-A0E	适用于 UTC-500 系列的 RFID 读取器
UTC-P06-A0E	适用于 UTC-500 系列的智能卡读取器

包装列表

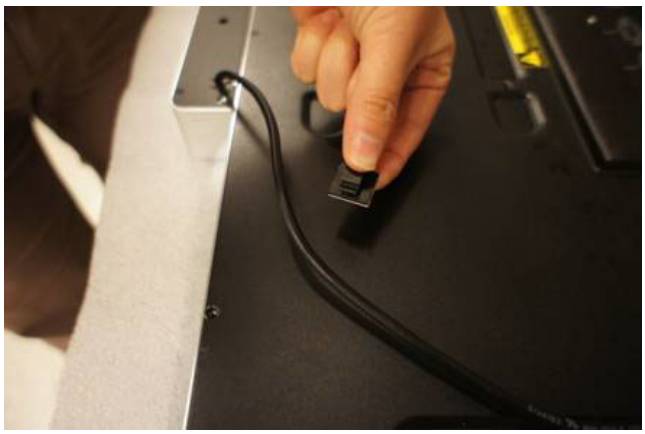
- UTC-PXX
- 光驱
- 电缆夹 x 2

安装 UTC 外围

1. 将 UTC 外围安装到 UTC-500 系列侧槽中。
   （UTC-500 在设备外面一圈设计了独特的侧槽安装区域。客户便于将外围设备安装在应用中。）

2. 用螺丝将外围固定在合适的位置。

3. 将电缆连接到 I/O 端口 （USB）。



4. 选择一个位置放置电缆夹，然后将电缆连接上。

将外围安装到设备顶部

将外围安装到设备底部

将外围连接到设备左侧

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