



User Manual

UTC-315 POS Series

**Intel® Platform Touch Computer
with 15.6" TFT LCD for POS
Series**

ADVANTECH

Enabling an Intelligent Planet

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This manual is for the UTC-315 POS series.

Declaration of Conformity

FCC Class A

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 Regulations. These limits are designed to provide reasonable protection against harmful interference in residential installations. 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, as determined by turning the equipment off and on, users are encouraged to try to correct the interference using 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 that differs from the one to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for assistance

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



Packing List

Before installing UTC-315, ensure that the following materials are included in the shipment:

- UTC-315
- Accessories for UTC-315
 - 1 x Warranty card
 - 1 x Adapter
 - 1 x SATA cable

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

Technical Support and Assistance

1. Visit the Advantech website at <http://support.advantech.com> to obtain the latest product information.
2. Contact your distributor, sales representative, or Advantech's customer service center for technical support if you require additional assistance. Please have the following information ready before calling:
 - Product name and serial number
 - Description of your peripheral attachments
 - Description of your software (operating system, version, application software, etc.)
 - Comprehensive description of the problem
 - The exact wording of any error messages

Safety Instructions

1. Read these safety instructions carefully.
2. Retain this user manual for future reference.
3. Disconnect this equipment from all AC outlet before cleaning. Use only a damp cloth for cleaning. Do not use liquid or spray detergents.
4. For pluggable equipment, the power outlet socket must be located near the equipment and easily accessible.
5. Protect this equipment from humidity.
6. Place this equipment on a reliable surface during installation. Dropping or letting the equipment 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. Ensure that the voltage of the power source is correct before connecting the equipment to a power outlet.
9. Position the power cord away from high-traffic areas. Do not place anything over the power cord.
10. All cautions and warnings on the equipment should be noted.
11. If unused for a long time, disconnect the equipment from the power source to avoid damage from transient overvoltage.
12. Never pour liquid into an opening in the device. 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 occurs, have the equipment checked by authorized service personnel:
 - The power cord or plug is damaged.
 - Liquid has penetrated the equipment.
 - The equipment has been exposed to moisture.
 - The equipment is malfunctioning, or does not operate according to the user manual.
 - The equipment has been dropped and damaged.
 - The equipment has obvious signs of breakage.
15. Do not store this equipment in an environment where the temperature fluctuates below -20 °C (-4 °F) or above 60 °C (140 °F) as this may cause damage. The equipment should be stored in a controlled environment.
16. Batteries are at risk of exploding if incorrectly installed. Replace only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.
17. The sound pressure level at the operator position does not exceed 70 dB (A) in accordance with IEC 704-1:1982.

DISCLAIMER: These instructions are provided according to IEC 704-1. Advantech disclaims all responsibility for the accuracy of any statements contained herein.

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Chapter 1

General Information

This chapter provides basic information about UTC-315 POS.

- Introduction
- General Specifications
- LCD Specifications
- Dimensions

1.1 Introduction

UTC-315 POS is a multi-purpose all-in-one computing system equipped with a wide-screen touch-based LCD panel. The system can be integrated with peripherals and display systems to enable diverse interactive signage and self-service applications. With its removable frame design and mount installation support, the system can also be employed for various control system applications.

1.2 General Specifications

1.2.1 General

- **Dimensions (L x H x D):** 525 x 430 x 340 mm
- **Weight:** 7.5 kg
- **Power adaptor:** AC/DC 12 V, 84 W
Input voltage: 100 ~ 240 V_{AC}
Output voltage: 12 V @ 7 A
- **Disk drive housing:** Accommodates 1 x 2.5" SATA HDD
- **Front panel:** IP65 rated

1.2.2 Standard PC Functions

- **CPU:** Intel® Celeron® J1900/Core™ i5-4300U with 3 MB L2 cache
- **BIOS:** AMI 16 MB Flash BIOS via SPI
- **System chipset:** Intel® Celeron® J1900/Core™ i5-4300U
- **System memory:** 1 x SODIMM DDR3L 1333 MHz, up to 8 GB
- **Serial ports:** 1 x RS-232 COM, 1 x RS-232/422/485
- **Universal serial bus (USB) port:** Up to 2 x USB 2.0/4 x USB 3.0
- **Mini PCIe bus expansion slot:** 1 x mini PCIe device (wireless LAN card)
- **Watchdog timer:** Single-chip watchdog with 255-level interval timer, setup via software
- **Power management:** Full ACPI (Advanced Configuration and Power Interface) 2.0, supports S0, S1, S3, S4, S5

1.2.3 Audio Function

- **Audio:** HD audio, 2 x 1W speakers
- Optional - Audio output function

1.2.4 LAN Function

- **Chipset:** LAN1 Intel® I218-LM, LAN2 Intel® WGI211-AT
- **Speed:** 1000 Mbps /Interface: 2 x RJ45
- **Functionality:** Wake-on-LAN with ATX power control and LAN teaming (in fault tolerance)

1.2.5 Touchscreen (Optional)

Type	Analog 5-wire resistive (resistive flat glass) /Projected capacitive touch panel (Pcap. flat glass)
Light Transmission	80%
Controller	USB interface
Durability (touches in a lifetime)	36 million

1.2.6 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 0.5 Grms, random
- **VESA mount:** 75 x 75 mm (8 x M4 screws)

Caution! Use suitable mounting apparatus to minimize risk of injury.



- Supports landscape and portrait screen orientation

Note! Adhere to the instructions for installing UTC-315 POS.



1.3 LCD Specifications

- **Display type:** 15.6" TFT LCD
- **Max. resolution:** 1366 x 768
- **Colors:** 262 K
- **Pixel pitch (H x V):** 252 x 252 (um)
- **View angle:** 90°/60°
- **Luminance:** 200 cd/m²

Note! *UTC-315 POS is integrated with a high-quality, reliable color LCD panel. However, the panel may have a few defective pixels that do not illuminate. With the technology currently available, completely eliminating defective pixels is not possible. Nonetheless, Advantech is actively working to improve this technology.*



1.4 Optional Modules

- **Memory:** 1 x SODIMM DDR3L 1333 MHz, up to 8 GB
- **HDD:** 2.5" SATA HDD
- **Operating system:** Windows Embedded Standard 7, Windows Embedded Standard 8.1, Embedded Linux 3.0
- **Touchscreen:** Analog resistive (optional PCT solution)
- **Power cord:** 1702002600 (US) 1702002605 (Europe)
- **Wireless LAN module:**

Part Number	Description
968EMW0071	Wireless 802.11abgn AR9382 2T2R full-size DNXA-1
1750006682-01	Main antenna, wireless, 200 mm

1.5 Dimensions

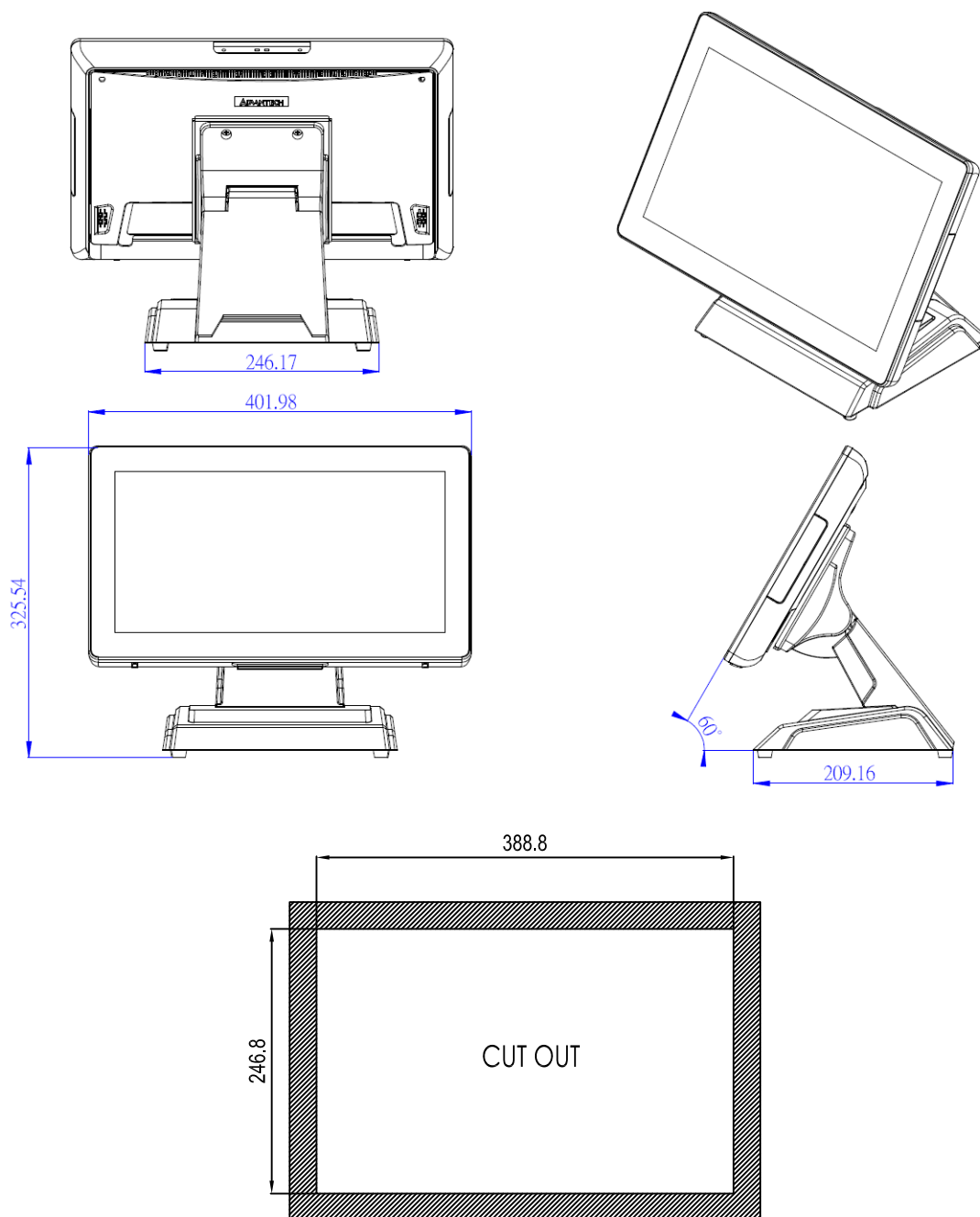


Figure 1.1 UTC-315 POS dimensions

Chapter 2

System Setup

This chapter explains the system setup process for UTC-315 POS.

- Quick Tour of UTC-315 POS
- Installation Procedures
- Running the BIOS Setup
- Installing System Software
- Installing Drivers

2.1 Quick Tour of UTC-315 POS

Before setting up UTC-315 POS, familiarize yourself with the location and functions of the controls, drives, connectors, and ports (see Figures 2.1 and 2.2).

When placed upright on a desk, the UTC-315 POS front panel appears as shown in Figure 2.1.



Figure 2.1 Front view of UTC-315 POS

Located at the rear of UTC-315 POS is the system I/O, as shown in Figure 2.2. The various I/O includes Ethernet, USB, HDMI, Line Out, Mic In, RJ11, DC In, VGA, and serial ports.)

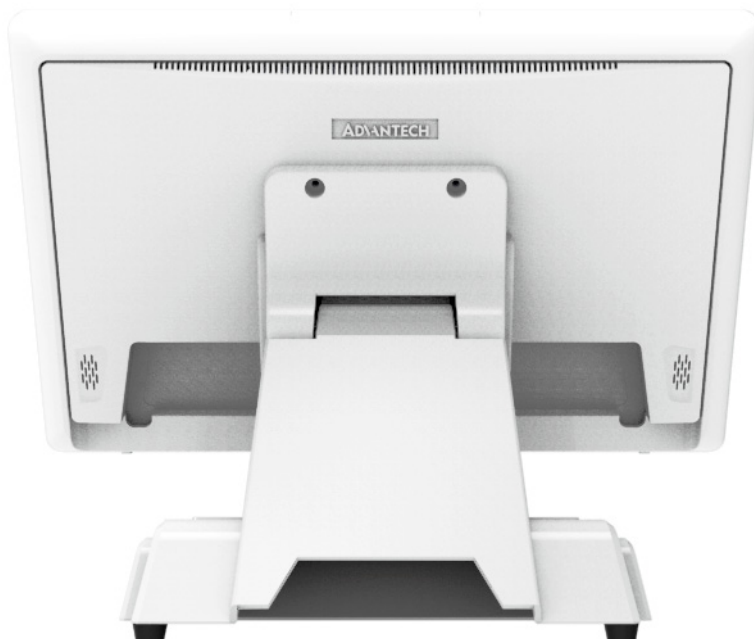
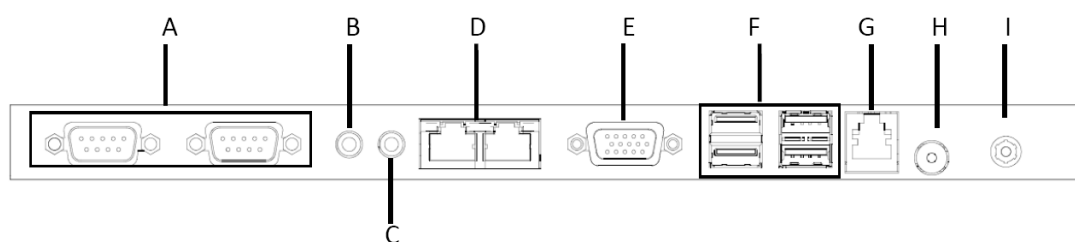


Figure 2.2 Rear view of UTC-315 POS



- | | |
|---------------------|---|
| A. COM | B. Line Out |
| C. Mic In | D. Gigabit LAN x2 |
| E. VGA for Celeron® | F. 2 x USB 2.0, 4 x USB 3.0 for Core™ i |
| HDMI for Core™ i | 3 x USB 2.0, 1 x USB 3.0 for Celeron® |
| G. RJ11 | H. Power Switch |
| I. DC In | |

2.2 Installation Procedures

2.2.1 Connecting the Power Cord

The UTC-315 POS is powered by DC power supply. Be sure to hold the plug end when plugging or unplugging the power cord. See Figure 2.3 regarding connecting the male plug of the power cord to the DC inlet of UTC-315 POS.

2.2.2 Connecting a Keyboard or Mouse

Before starting up the computer, connect a keyboard via the I/O ports located at the rear of UTC-315 POS.

2.2.3 Switching on the Power

The power switch is located at the rear of UTC-315 POS.3.

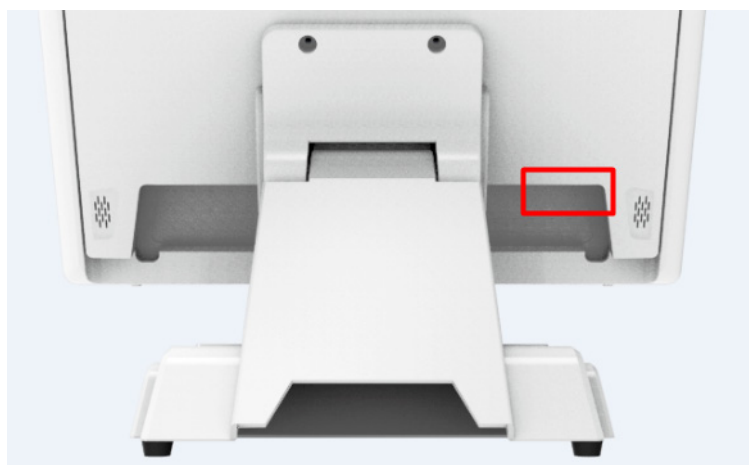


Figure 2.3 Connect the power cord to the DC inlet

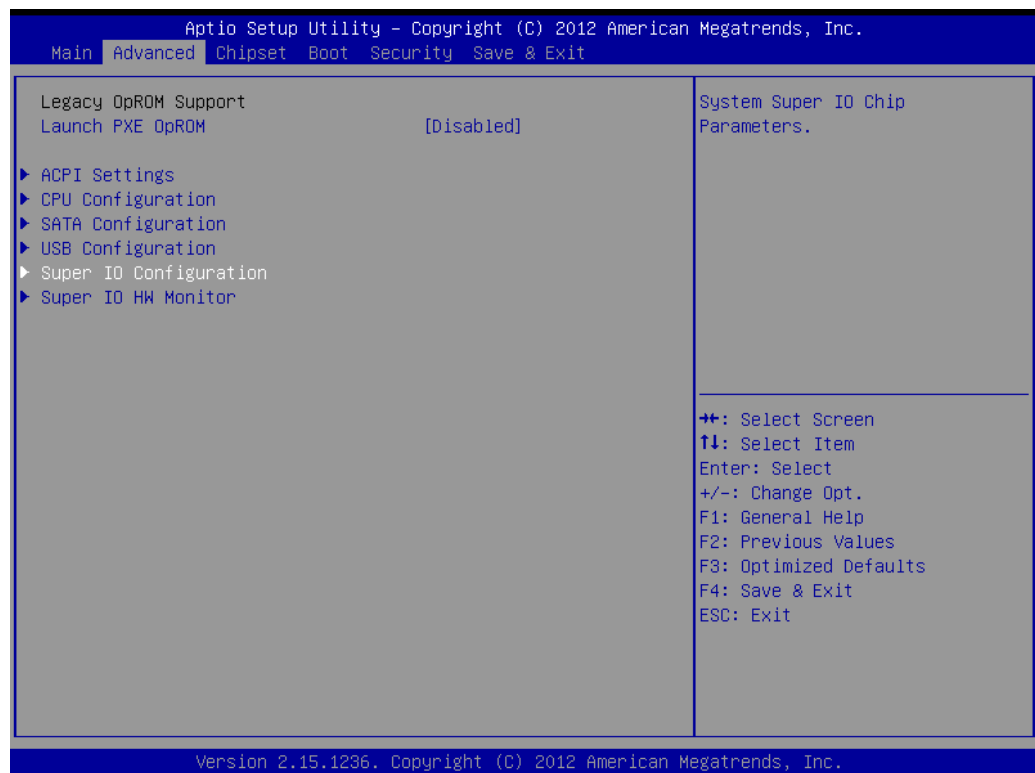
2.3 Running the BIOS Setup

In most cases, the device will have been setup and configured by the dealer prior to delivery. Nonetheless, some users may need to access the UTC-315 POS' BIOS (Basic Input-Output System) setup program to configure the system data, such as the current date/time and hard drive type. The BIOS setup program is stored in read-only memory (ROM) and can be accessed during system power up/reset by pressing "Del" on the keyboard.

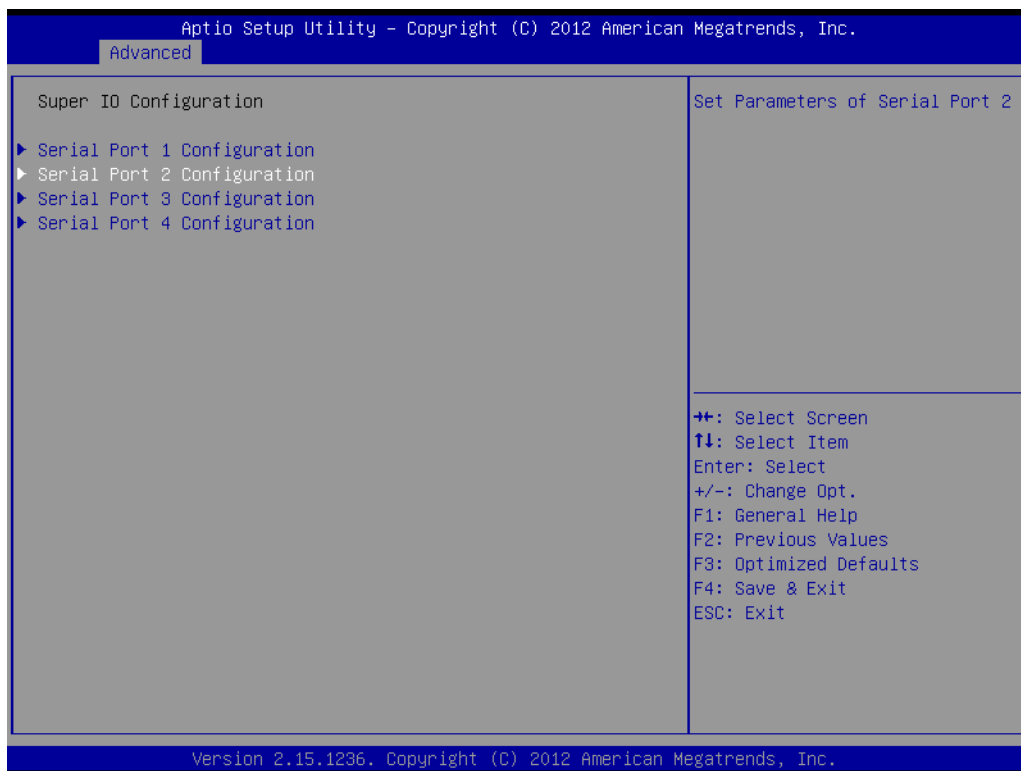
The settings specified are then stored in a special area of memory called CMOS RAM. This memory is backed up by a battery to ensure data retention when the system is shut down or reset. Whenever powered up, the system reads the settings stored in CMOS RAM and compares them to the results of the equipment check conducted during the power on self-test (POST). If an error occurs, an onscreen error notification will be displayed prompting users to run the setup program.

COM2 RS232/RS422/RS485 Selection

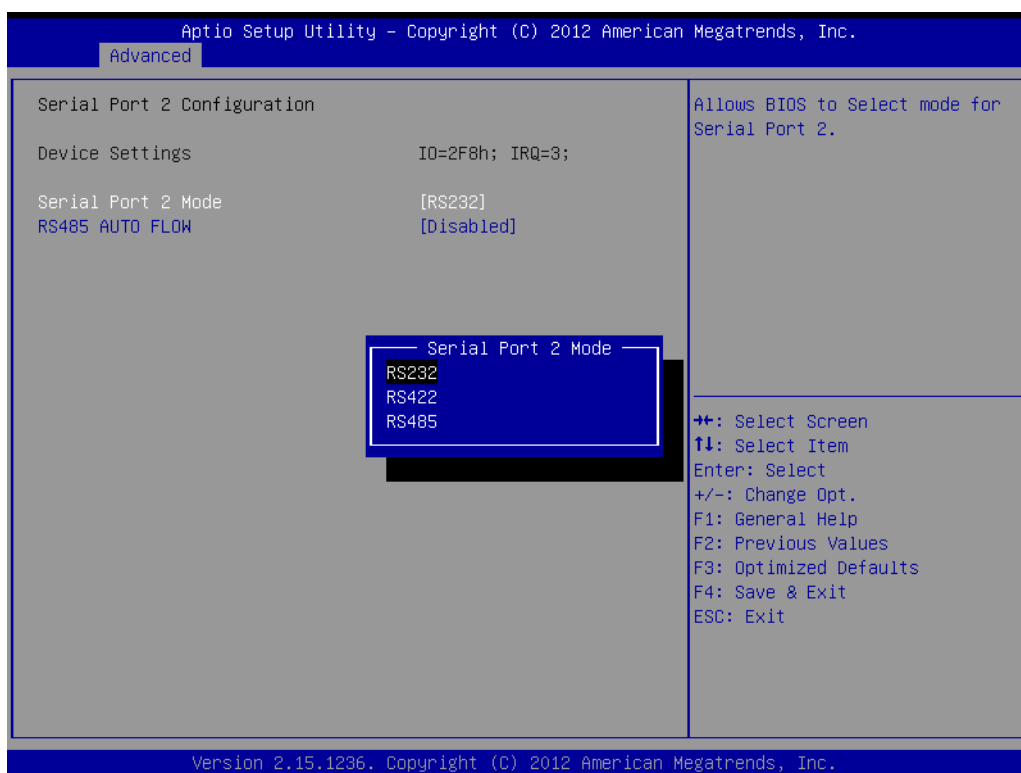
Access the BIOS Setup Utility → Advanced → Super IO Configuration



Select the “Serial Port 2 Configuration” option



Change the Serial Port 2 Mode [RS232/RS422/RS485]



2.4 Installing System Software

Recent releases of operating systems by major vendors include setup programs that load automatically and guide users through hard disk preparation and operating system installation. The instructions below outline the steps for installing an operating system on the UTC-315 POS hard drive.

Note! *Some distributors and system integrators may have preinstalled system software onto UTC-315 POS prior to shipment.*



Software installation requires that an HDD is already installed. Software can be loaded onto UTC-315 using any of the following four methods:

2.4.1 Method 1: Ethernet

The Ethernet port can be used to download software to the HDD.

2.4.2 Method 2: External USB CD-ROM

Insert the operating system installation disk into the disk drive until the release button pops up. The UTC-315 POS BIOS also supports system bootup directly from the CD-ROM drive. After inserting the installation disk, power on or reset the system by pressing “Ctrl” + “Alt” + “Del” simultaneously. UTC-315 POS will automatically load the operating system from the disk or CD-ROM drive.

If presented with the opening screen of a setup or installation program, follow the onscreen instructions. The setup program will guide users through preparing the hard drive and installing the operating system. If presented with an operating system command prompt, such as A:\>, users must partition and format the hard drive before manually copying the operating system files. Refer to the operating system user manual for instructions on partitioning and formatting a hard drive.

2.5 Installing Drivers

After the system software is installed, the Ethernet, chipset, graphics, audio, USB 3.0, and touchscreen functions can be setup. All the drivers can be downloaded from the Advantech website.

Note! *The drivers and utilities used for UTC-315 POS are subject to change without notice.*



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

Chapter 3

Hardware Installation and Upgrades

This chapter outlines the UTC-315 POS hardware installation procedures.

- Introduction
- Installing a 2.5" Hard Disk Drive
- Installing an mSATA Card
- Installing WLAN

3.1 Introduction

The UTC-315 is a PC-type computer housed in a plastic enclosure. To install an HDD, DRAM, or mini SATA card, users must remove the rear cover. All maintenance or hardware upgrades can be completed easily when the rear cover is removed.

Warning! *Only remove the rear cover after verifying that no power is flowing within the system. The power must be switched off and the power cord unplugged. These cautions should be headed each time UTC-315 POS is serviced.*



3.2 Installing a 2.5" Hard Disk Drive

The UTC-315 POS internal controller supports one SATA hard disk drive. The SATA controller enables faster data transfers and hard drive space that exceeds 150 MB. Instructions for installation are provided below.

1. Detach and remove the POS stand.
2. Detach and remove the rear cover.
3. Place the HDD in the metal bracket, and fasten in place by tightening the bracket screws (see Figure 3.1).
4. The HDD cable (SATA 7P+1*5P-2.5/SATA(15+7)P) is located next to the metal brace. Connect the HDD cable to the motherboard (SATA1/SATA Power). Plug the other end of the cable into the SATA hard drive.
5. Replace the rear cover and affix it in place by tightening the cover screws.

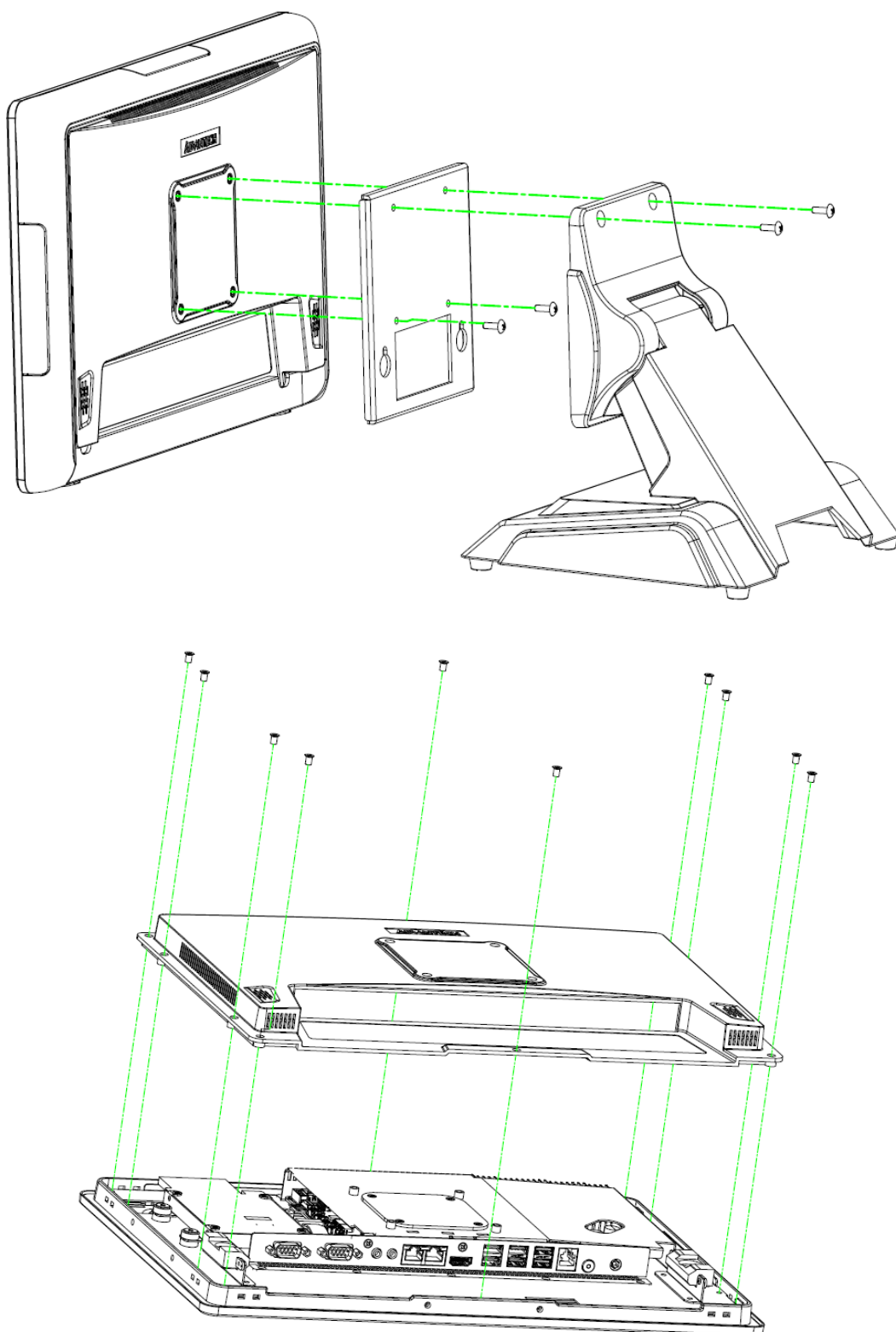


Figure 3.1 Primary 2.5" HDD installation

3.3 Installing an mSATA Card

1. Remove the 10 screws holding the back cover in place.
2. Remove the 6 screws holding on the reinforced board in place.

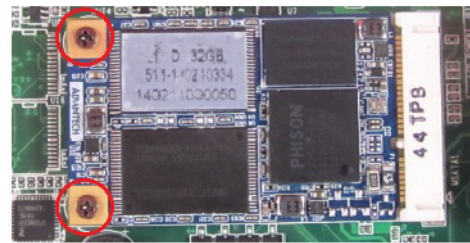
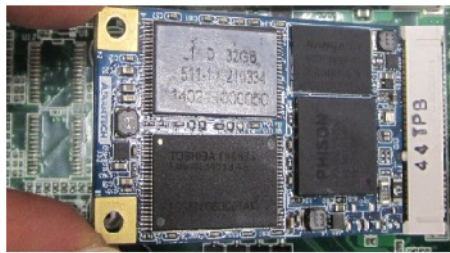
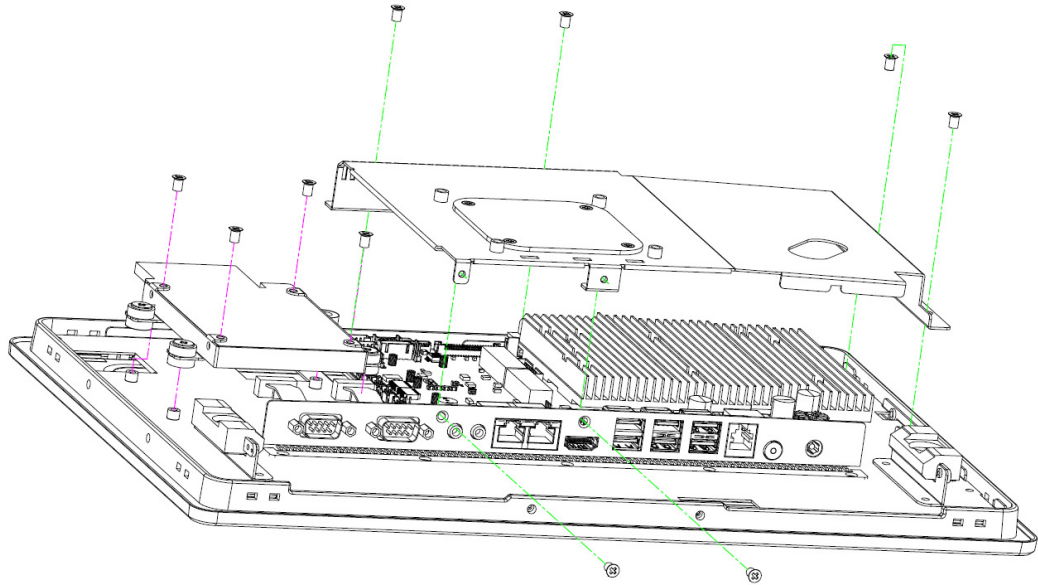
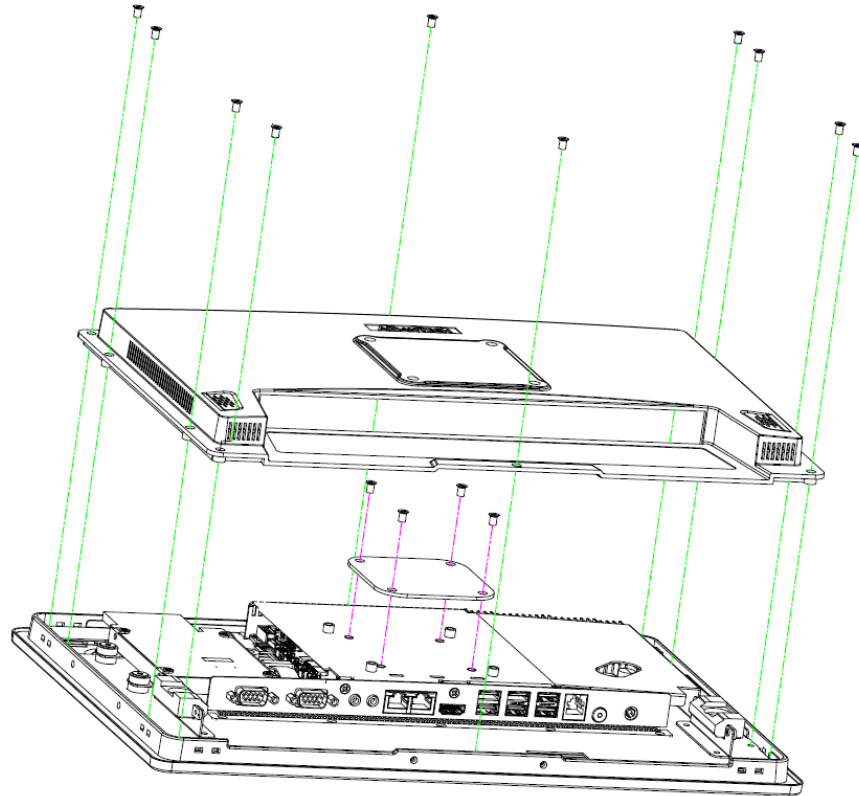


Figure 3.2 mSATA card installation

3.4 Installing WLAN

Reserve two locations for the external antenna. One location should be an I/O port, and the other location on the rear cover. Users can choose between the two locations according to their usage requirements.

1. Remove the 10 screws holding the back cover in place.



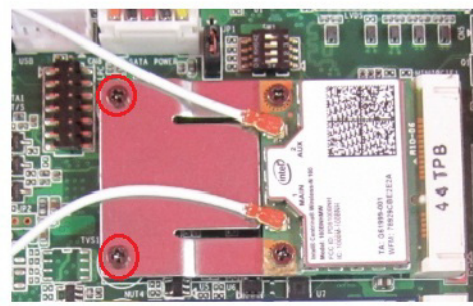
2. Remove the 6 screws holding the reinforced board in place.
3. Obtain a coaxial cable (Advantech P/N: 1750006682-01).



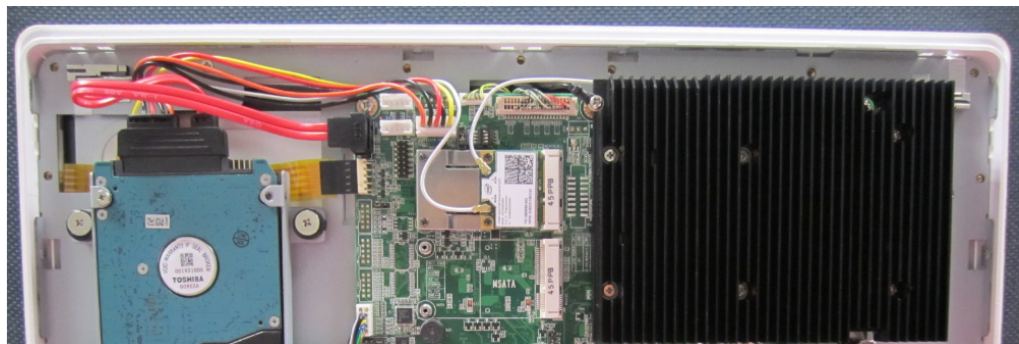
4. Connect the coaxial cable to “ANT1” on the WLAN card.



5. Install the WLAN card on the underside of the motherboard.



6. Route the cables of the wireless antenna as shown below.



Chapter 4

Jumper Settings and Connectors

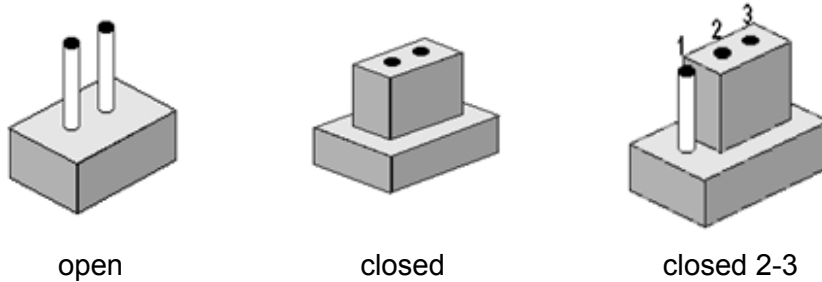
This chapter explains how to set up the UTC-315 POS hardware, including setting jumpers and connecting peripherals, switches, and indicators. Read all safety precautions before beginning installation.

- Jumpers and Connectors
- CMOS Clear for External RTC (JP3)
- COM Port Interface
- Watchdog Timer Configuration

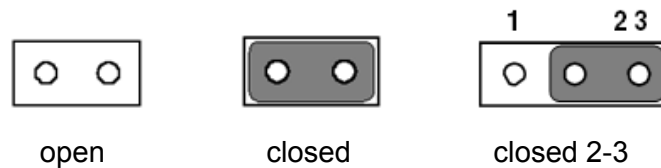
4.1 Jumpers and Connectors

4.1.1 Setting Jumpers

UTC-315 POS can be configured according to the application requirements by setting jumpers. A jumper is the simplest type of electrical switch. Jumpers consist of two metal pins and a small metal clip (typically protected with a plastic cover) that slides over the pins to connect them. To “close” a jumper, connect the pins using the clip. To “open” a jumper, remove the clip. Some jumpers have three pins, which are labeled 1, 2, and 3. In such cases, connect either Pins 1 and 2 or Pins 2 and 3.



The jumper settings are schematically depicted below.



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

4.1.2 Jumpers and Connectors

The UTC-315 POS motherboard features a number of jumpers and connectors that enable the system to be configured according to specific application requirements. The function of every jumper is listed in the table below.

Table 4.1: Jumper and Connector Functions

Label	Function
CN1	Back Light
CN2	Internal USB
CN3	SATA Power
CN4	LVDS
CN5	SATA
CN6	Touch
CN9	Touch
DIMM1	DDR3L SODIMM
MINIPCIE1	Mini PCIe
MSATA1	MSATA
CN11	CSAFE
CN13	COM2
CN14	COM1
CN15	Speaker
CN21	Line Out
CN22	Mic In
CN17	LAN 1/2
CN24	HDMI
CN19	External USB
CN20	External USB
CN18	External USB
CN23	RJ11
SW2	Power Button
CN25	DC In

4.1.3 Jumper and Connector Locations

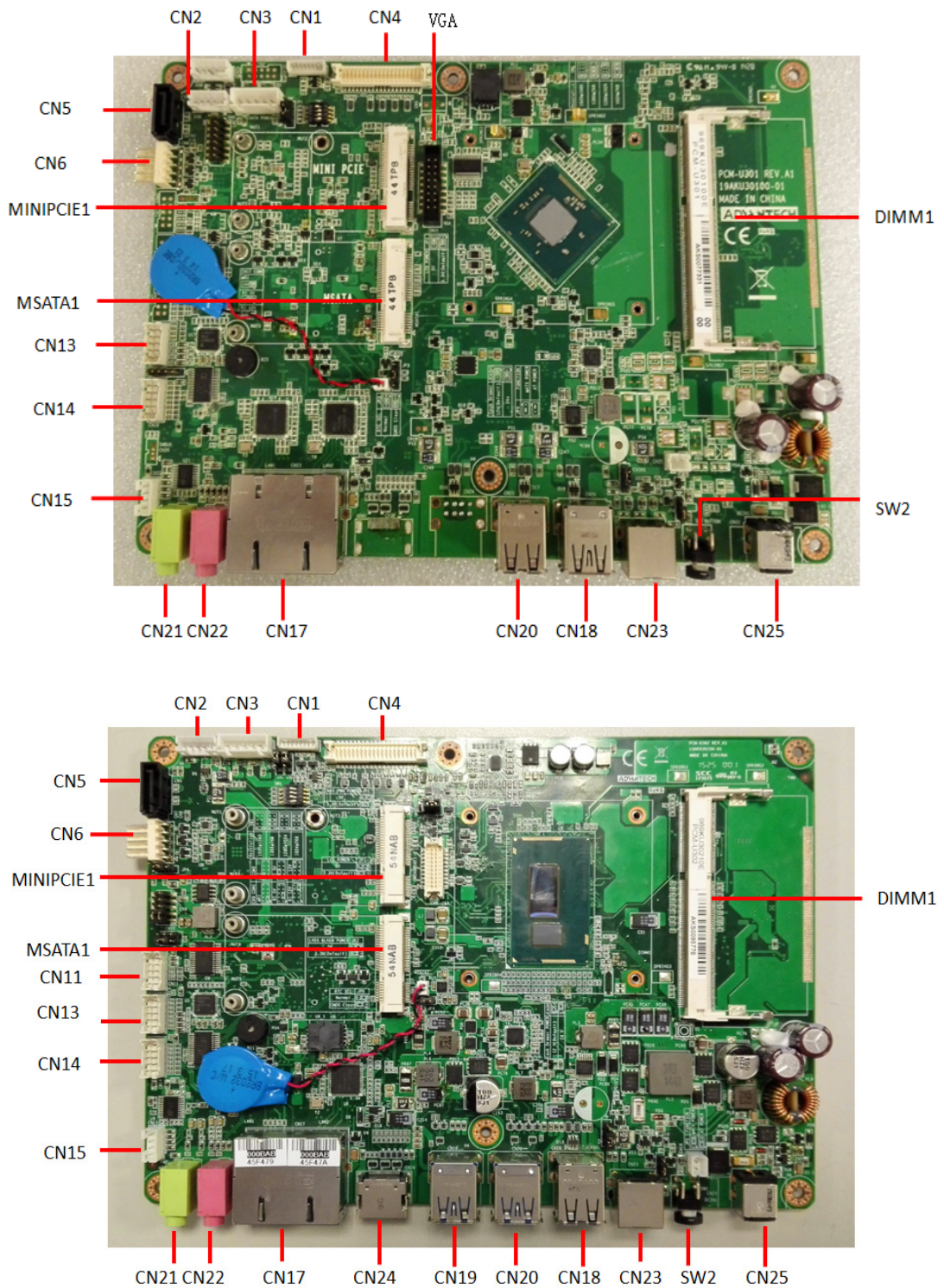


Figure 4.1 Jumpers and connectors on the UTC-315 POS motherboard

4.2 Jumpers

4.2.1 Jumper List

Table 4.2: Jumper List

JP1	LCD PWM Power
JP2	LCD Enable Power
JP3	LCD Power
JP4	Touch Power
JP5	AT/ATX Power SEL
JP6	Clear CMOS
CN9	COM1/COM2 Ring Power
CN10	CSAFE Power

4.2.2 Jumper Settings

Table 4.3: JP1: LCD PWM Power

Part Number	1653003101
Footprint	HD_3x1P_79_D
Description	Pin Header 3 x 1P 2.0 mm 180 D(M) DIP 2000-13 WS
Setting	Function
(1-2)	5V
(2-3)*	3.3V

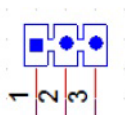


Table 4.4: JP2: LCD Enable Power

Part Number	1653003101
Footprint	HD_3x1P_79_D
Description	Pin Header 3 x 1P 2.0 mm 180 D(M) DIP 2000-13 WS
Setting	Function
(1-2)	5V
(2-3)*	3.3V

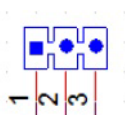
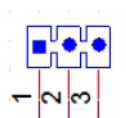
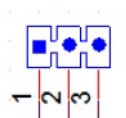


Table 4.5: JP3: LCD Power

Part Number	1653003100
Footprint	HD_3x1P_100_D
Description	Pin Header 3 x 1P 2.54 mm 180 D(M) DIP 1130-000-03S
Setting	Function
(1-2)	5V
(2-3)*	3.3V

**Table 4.6: JP4: Touch Power**

Part Number	1653003101
Footprint	HD_3x1P_79_D
Description	Pin Header 3 x 1P 2.0 mm 180 D(M) DIP 2000-13 WS
Setting	Function
(1-2)*	+3.3V
(2-3)	+3.3VSB

**Table 4.7: JP5: AT/ATX Power SEL**

Part Number	1653005101
Footprint	HD_5x1P_79_D
Description	Pin Header 3 x 1P 2.0 mm 180 D(M) DIP 2000-13 WS
Setting	Function
(1-2)	AT
(2-3)*	ATX

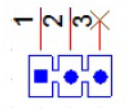
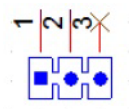
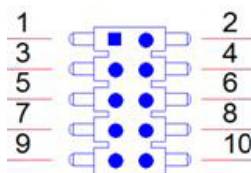


Table 4.8: JP6: Clear CMOS

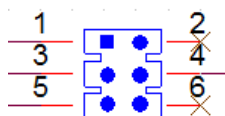
Part Number	1653005101
Footprint	HD_5x1P_79_D
Description	Pin Header 3 x 1 P 2.0 mm 180 D(M) DIP 2000-13 WS
Setting	Function
(1-2)	Clear CMOS
(2-3)*	Normal

**Table 4.9: CN9: COM 1/2 Ring Power**

Part Number	1653005261
Footprint	HD_5x2P_79
Description	Pin Header 5 x 2P 2.0 mm 180 D(M) SMD 21N22050
Setting	Function
(1-3) *	COM1 Ring
(3-5)	COM1 RI output +5V
(7-9)	COM1 RI output +12V
(2-4) *	COM2 Ring
(4-6)	COM2 RI output +5V
(8-10)	COM2 RI output +12V

**Table 4.10: CN10: CSAFE Power**

Part Number	1653003201
Footprint	HD_3x2P_79_D
Description	Pin Header 3 x 2P 2.0 mm 180 D(M) DIP 21N22050
Setting	Function
(1-3) *	CSAFE output +5V
(3-4)	CSAFE output +9V
(3-5)	CSAFE output +12V



Appendix **A**

I/O Pin Assignments

A.1 Pin Assignments

Table A.1: CN1: Backlight

Part Number	1655004512-01
Footprint	WF_8P_49_BOX_D
Description	Wafer Box 8 P 1.25 mm 180 D(M) DIP A1251WV0-8P
Pin	Pin Name
1	+12V_Inverter
2	+12V_Inverter
3	GND
4	GND
5	BKLT_EN
6	Bright1
7	+12V_Inverter
8	GND

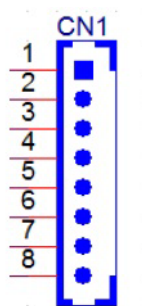


Table A.2: CN2: Internal USB

Part Number	1655000453
Footprint	WHL5V-2M-24W1140
Description	Wafer Box 2.0 mm 5 P 180 D(M) DIP WO/Pb JIH VEI
Pin	Pin Name
1	+5V
2	D-
3	D+
4	GND
5	GND

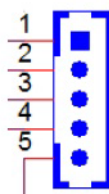
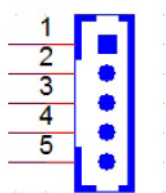


Table A.3: CN3: SATA Power

Part Number	1659254005
Footprint	SATA_7P_WATM-07DBN4A3B8UW_D
Description	Serial ATA 7P 1.27 mm 180 D(M) DIP WATM-07DBN4A3B8
Pin	Pin Name
1	+3.3V
2	GND
3	+5V
4	GND
5	+12V

**Table A.4: CN4: LVDS**

Part Number	1653920200
Footprint	SPH20X2
Description	B/B Connector 40 P 1.25 mm 90 D SMD DF13-40DP-1.25V(91)
Pin	Pin Name
1	+3.3V or +5V
2	+3.3V or +5V -
3	GND
4	GND
5	+3.3V or +5V
6	+3.3V or +5V
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

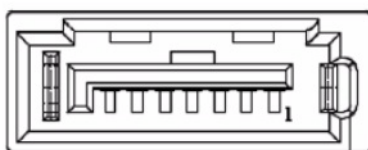
Table A.4: CN4: LVDS

25	LVDS0_CLK-
26	LVDS1_CLK-
27	LVDS0_CLK+
28	LVDS1_CLK+
29	GND
30	GND
31	LVDS0_DDC_SC
32	LVDS0_DDC_SD
33	GND
34	GND
35	LVDS0_D3-
36	LVDS1_D3-
37	LVDS0_D3+
38	LVDS1_D3+
39	+3.3V or +5V
40	+3.3V or +5V



Table A.5: CN5: SATA

Part Number	1654004659
Footprint	WF_5P_98_BOX_D
Description	Wafer Box 5 P 2.5 mm 180 D(M) DIP 2503-WS-5
Pin	Pin Name
1	GND
2	TX+
3	TX-
4	GND
5	RX+
6	RX-
7	GND

**Table A.6: CN9:Touch**

Part Number	1655005110
Footprint	WF_5P_100_RA_D
Description	Wafer 5 P 2.54 mm 90 D(M) DIP 2542-WR-5
Pin	Pin Name
1	Y+
2	Y-
3	Sense
4	X+
5	X-

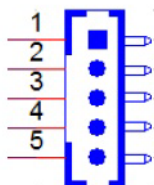


Table A.7: CN13: DDR3L SODIMM

Part Number	1651002087-11
Footprint	DDR3_204P_AS0A626-N2S6-7H
Description	DDR3 SODIMM H = 5.2 mm STD 204P SMD AS0A626-H2S6-7H
Pin	Pin Name
1	VREF_DQ
2	GND
3	GND
4	DQ4
5	DQ0
6	DQ5
7	DQ1
8	GND
9	GND
10	DQS0
11	GND
12	GND
13	DQ4
14	DQ0
15	DQ5
16	DQ1
17	GND
18	GND
19	GND
20	GND
21	DQ4
22	DQ0
23	DQ5
24	DQ1
25	GND
26	GND
27	DQS1
28	GND
29	GND
30	DQ4
31	DQ0
32	DQ5
33	DQ1
34	GND
35	GND

Table A.8: Mini PCIe1: Mini PCIe	
Part Number	1654002538
Footprint	FOX_AS0B226-S68K7F
Description	Mini PCIe 52 P 6.8 mm 90 D SMD AS0B226-S68Q-7H
Pin	Pin Name
1	MPCle1_Wake#
2	+3.3VSB
3	NC
4	GND
5	NC
6	NC
7	MPCle1_CLKREQ#
8	NC
9	GND
10	NC
11	CLK_Mini_PCl-
12	NC
13	CLK_Mini_PCl+
14	NC
15	GND
16	NC
17	NC
18	GND
19	NC
20	MPCle1_Disable#
21	GND
22	PLTRST#
23	PCIE_RX-
24	+3.3VSB
25	PCIE_RX+
26	GND
27	GND
28	+1.5V
29	GND
30	SMB_CLK_MPCle1
31	PCIE_TX-
32	SMB_DAT_MPCle1
33	PCIE_TX+
34	GND
35	GND
36	USB_D-
37	GND
38	USB_D+
39	+3.3VSB
40	GND
41	+3.3VSB
42	NC

Table A.8: Mini PCIe1: Mini PCIe

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

Table A.9: MSATA1: MSATA

Part Number	1654002538
Footprint	FOX_AS0B226-S68K7F
Description	Mini PCIe 52 P 6.8 mm 90 D SMD AS0B226-S68Q-7H
Pin	Pin Name
1	NC
2	+3.3V
3	NC
4	NC
5	NC
6	NC
7	NC
8	NC
9	GND
10	NC
11	NC
12	NC
13	NC
14	NC
15	GND
16	NC
17	NC
18	GND
19	NC
20	NC
21	GND
22	NC
23	SATA1_RX+
24	+3.3V
25	SATA1_RX-
26	GND
27	GND
28	NC
29	GND
30	NC

Table A.9: MSATA1: MSATA

31	SATA1_TX-
32	NC
33	SATA1_TX+
34	GND
35	GND
36	NC
37	GND
38	NC
39	+3.3V
40	GND
41	+3.3V
42	NC
43	NC
44	NC
45	NC
45	NC
47	NC
48	NC
49	NC
50	GND
51	+3.3V
52	+3.3V

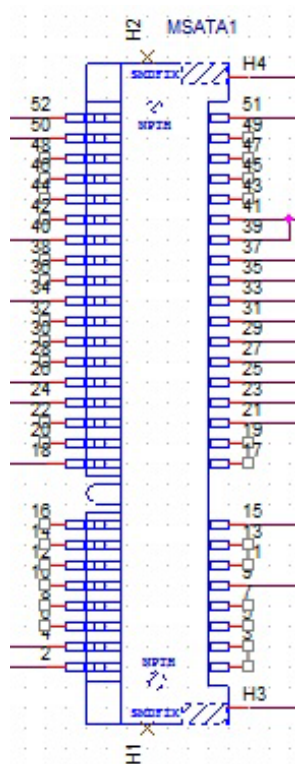


Table A.10: CN11: CSAFE

Part Number	1655000197
Footprint	WF_5x2P_79_BOX_D_P1R
Description	1655_WF_5x2P_79_BOX_D_P1R_0.Normal
Pin	Pin Name
1	Line_In1_L
2	Line_In1_R
3	COM3_RX+
4	COM3_TX
5	V_CSAFE
6	COM3_CTS#
7	GND
8	GND
9	

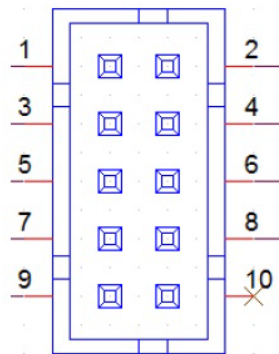
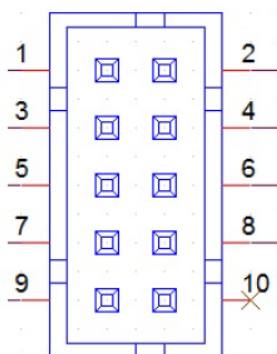


Table A.11: CN13: COM2

Part Number	1655000197
Footprint	WF_5x2P_79_BOX_D_P1R
Description	1655_WF_5x2P_79_BOX_D_P1R_0.Normal
Pin	Pin Name
1	422/485 TX-
2	422/485 TX+
3	422 RX+
4	422 RX-
5	GND
6	DSR#
7	RTS#
8	CTS#
9	RI#



UART RS485 Auto Flow Control

COM2 supports RS485 auto flow control function for all UART.

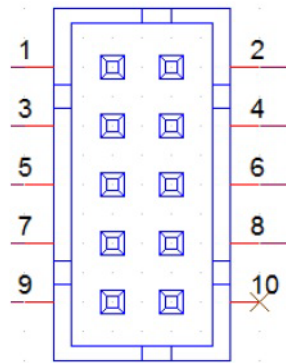
Enabling the RS485 auto control function automatically drives the RTS# pin logic to high or low for flow control.

To enable the RS485 auto flow control function, the parity and stop bit configuration must adhere to one of the following three options:

- (1) 8 data bits + 1 parity bit + 1 stop bit
- (2) 8 data bits + 1 parity bit + 2 stop bits
- (3) 8 data bits + 2 stop bits

Table A.12: CN14: COM1

Part Number	1655000197
Footprint	WF_5x2P_79_BOX_D_P1R
Description	1655_WF_5x2P_79_BOX_D_P1R_0.Normal
Pin	Pin Name
1	DCD
2	RXD
3	TXD
4	DTR#
5	GND
6	DSR#
7	RTS#
8	CTS#
9	RI#

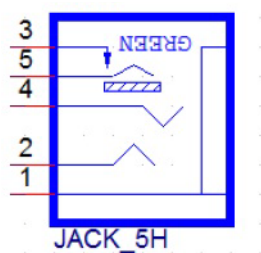
**Table A.13: CN15: Speakers**

Part Number	1655304020
Footprint	WF_4P_79_BOX_R1_D
Description	Wafer Box 2.0 mm 4 P 180 D(M) w/Lock A2001WV2-4P
Pin	Pin Name
1	AUD_OUTA-
2	AUD_OUTA+
3	AUD_OUTB+
4	AUD_OUTB-

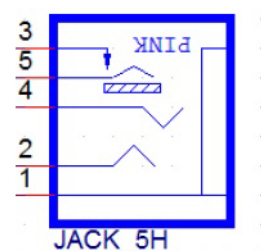


Table A.14: CN21: Line Out

Part Number	1652001586
Footprint	KUONYI_PJ-2508PC-5-L
Description	Phone Jack 5 P 3.5φ 90 D(F) Azalia Green DIP WO/P
Pin	Pin Name
1	GND
2	OUT_L
3	JD
4	OUT_R
5	GND

**Table A.15: CN22: Mic In**

Part Number	1652001584
Footprint	KUONYI_PJ-2508PA-5-L
Description	Phone Jack 5 P 3.5φ 90 D(F) Azalia Pink DIP WO/Pb
Pin	Pin Name
1	GND
2	MIC_L
3	JD
4	MIC_R
5	GND

**Table A.16: CN17: LAN 1/2**

Part Number	1652003274
Footprint	RJ45_28P_RTb-19GB9J1A
Description	Phone Jack RJ45 28P DIP RTB-19GB9J1A
Pin	Pin Name

Table A.17: CN24: HDMI

Part Number	1654011175-01
Footprint	HDMI_19P_QJ51191-LFB4-7F
Description	HDMI Connector 19 P 0.5 mm 90 D(F) SMD QJ51191-LFB4-7F
Pin	Pin Name
1	HDMI_TX0+
2	GND
3	HDMI_TX0-
4	HDMI_TX1+
5	GND
6	HDMI_TX1-
7	HDMI_TX2+
8	GND
9	HDMI_TX2-
10	HDMI_TX3+
11	GND
12	HDMI_TX3-
13	NC
14	NC
15	HDMI_CLK
16	HDMI_DAT
17	GND
18	+5V
19	HDMI_DET

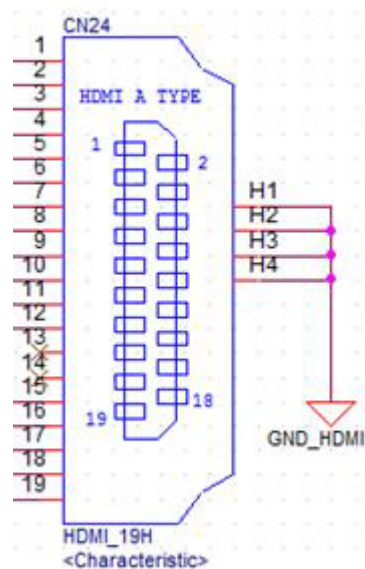


Table A.18: CN19: External USB

Part Number	1654010969-01
Footprint	USB_9x2P_UEA1112C-8HS6-4F
Description	USB Connector 18 P 2.0 mm 90 D(F) DIP UEA1112C
Pin	Pin Name
1	+5VSB
2	D-
3	D+
4	GND
5	SSRX-
6	SSRX+
7	GND
8	SSTX-
9	SSTX+
10	+5VSB
11	D-
12	D+
13	GND
14	SSRX-
15	SSRX+
16	GND
17	SSTX-
18	SSTX+

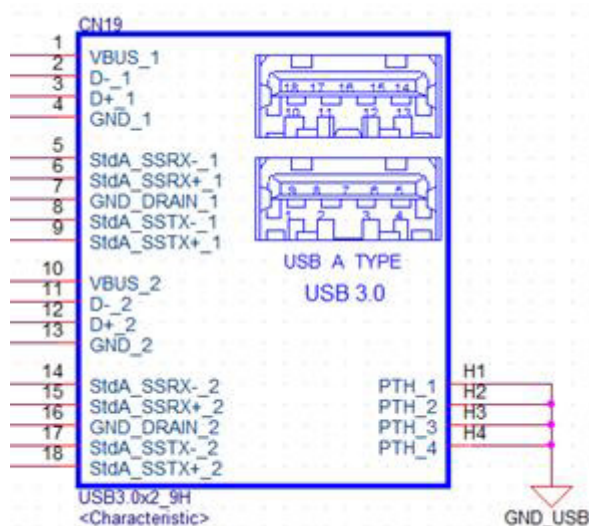


Table A.19: CN20: External USB

Part Number	1654010969-01
Footprint	USB_9x2P_UEA1112C-8HS6-4F
Description	USB Connector 18 P 2.0 mm 90 D(F) DIP UEA1112C
Pin	Pin Name
1	+5VSB
2	D-
3	D+
4	GND
5	SSRX-
6	SSRX+
7	GND
8	SSTX-
9	SSTX+
10	+5VSB
11	D-
12	D+
13	GND
14	SSRX-
15	SSRX+
16	GND
17	SSTX-
18	SSTX+

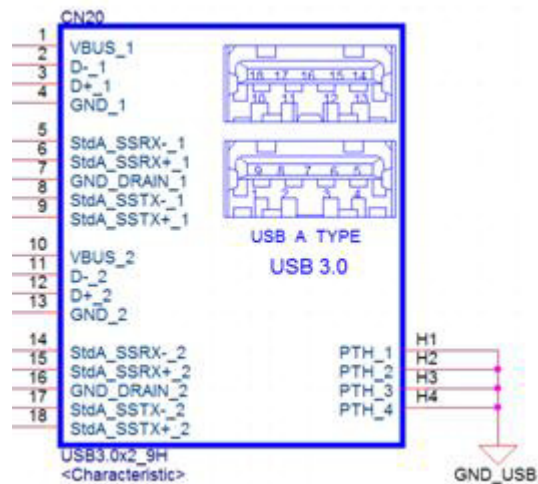
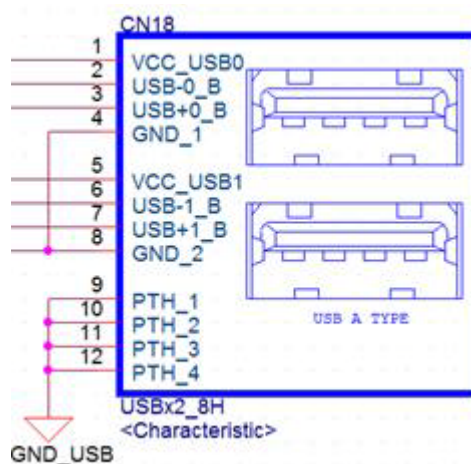


Table A.20: CN18: External USB

Part Number	1654009513
Footprint	USB_8P_UB1112C-8FDE-4F
Description	USB Connector 8 P 2.0 mm 90 D DIP UB1112C-8FDE-4F
Pin	Pin Name
1	+5VSB
2	D-
3	D+
4	GND
5	+5VSB
6	D-
7	D+
8	GND

**Table A.21: CN23: RJ11**

Part Number	1652005977-02
Footprint	RJ11_6P_RJ1201-66N024R0
Description	Phone Jack RJ11 6P6C 90 D(F) DIP 6u RJ1201-66N024
Pin	Pin Name
1	GND
2	GPIOA
3	Status
4	Power
5	GPIOB
6	GND

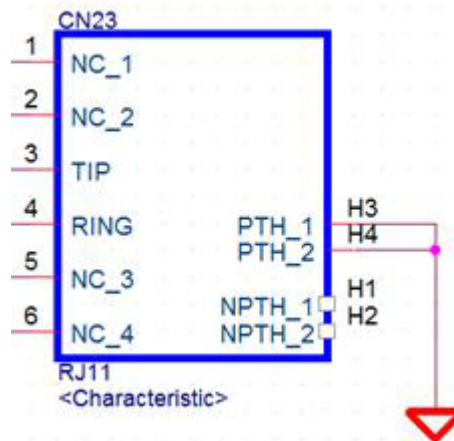


Table A.22: SW2 Button: Power Button

Part Number	1600000055
Footprint	SW_6P_TC003-N11AABRGXX-RK_D
Description	Push SW DIP 6P W/LED WO/Pb TC003-N11AABRGXX-RK
Pin	Pin Name
1	GND
2	GND
3	ATX_PWRBTN#
4	ATX_PWRBTN#
5	+5V
6	GND

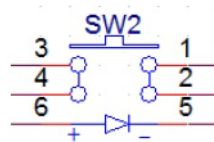


Table A.23: CN31: DC In

Part Number	1652005624
Footprint	PJ_2P_2DC-G213B200
Description	DC Power Jack 2.5 mm 90 D(M) DIP 2DC-G213B200
Pin	Pin Name
1	DC_IN
2	GND

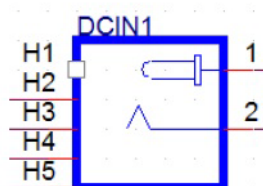
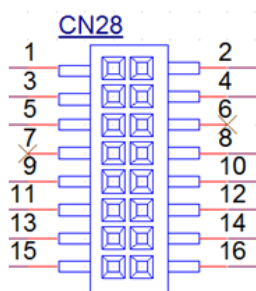


Table A.24: VGA

Part Number	1653208260
Footprint	HD_8x2P_79_BOX
Description	Box Header 8 x 2P 2.00 mm 180 D(M) SMD 23N6850
Pin	Pin Name
1	VGA_R
2	+5V
3	VGA_G
4	GND
5	VGA_B
6	NC
7	NC
8	VGA_DDAT
9	GND
10	VGA_HS
11	GND
12	VGA_VS
13	GND
14	VGA_DCLK
15	GND
16	GND





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