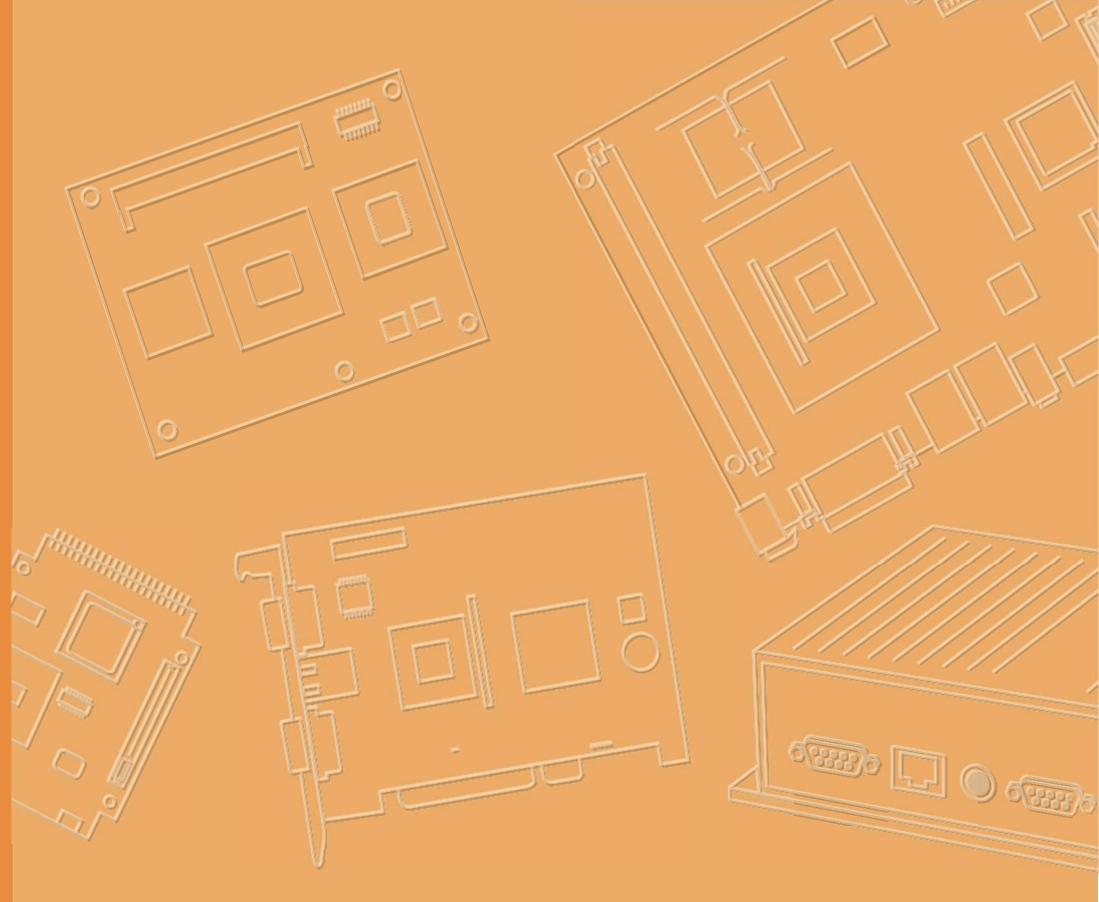


**User Manual**



# **UTC-115/120**

**15.6"/21.5"**  
**Ubiquitous Touch Computer**

**ADVANTECH**

*Enabling an Intelligent Planet*

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For technical support and customer service, visit our support website at <http://support.advantech.com>.

This manual is applicable to UTC-115/120.

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## Product Warranty (2 years)

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

This warranty does not apply to any products that have been repaired or altered by persons other than repair personnel authorized by Advantech, or products that have been subject to misuse, abuse, accident, or improper installation. Advantech assumes no liability under the terms of this warranty as a consequence of such events.

Because of Advantech's high quality-control standards and rigorous testing, most customers never need to use our repair service. However, if an Advantech product is defective, it will be repaired or replaced free of charge during the warranty period. For out-of-warranty repairs, customers will be billed according to the cost of replacement materials, service time, and freight. Please consult your dealer for more details.

If you believe your product is defective, follow the steps outlined below.

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

## Declaration of Conformity

### FCC Class A

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in such cases users are required to correct the interference at their own expense.

**Warning!** Any modifications to this device that are not approved by the relevant standards authority may void the authority granted to the user by the FCC to operate this equipment.



## 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 need 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.)
  - A complete description of the problem
  - The exact wording of any error messages

## Warnings, Cautions, and Notes

**Warning!** Batteries are at risk of exploding if incorrectly installed. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.



**Warning!** The rated input voltage is 12V/5A for UTC-115G, and 12V/7A for UTC-120G and UTC-115/120H.



Use a 3V/195mA lithium battery.

**Packing:** The unit should be carried with both hands and handled with care.

**Maintenance:** Use only approved products or a dry applicator to clean and maintain the surfaces.

**CompactFlash:** Turn off the system power before inserting or removing the CompactFlash storage card.

## Packing List

Before beginning installation, check that the following items have been included with the product:

- 1 x UTC-115/120 unit
- Accessories for UTC-115/120
  - DC 12V/5A 60W adapter (UTC-115G)
  - DC 12V/7A 84W adapter (UTC-120G; UTC-115/120H)

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

# Safety Instructions

1. Read these safety instructions carefully.
2. Retain this user manual for future reference.
3. Disconnect this equipment from all power outlets before cleaning. Use only a damp cloth to clean. 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 device 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 the 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. 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 occurs, have the equipment checked by 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 shows obvious signs of breakage.
15. Do not place the equipment in an environment with a storage temperature of below -20 °C (-4 °F) or above 60 °C (140 °F) as this may cause damage. The equipment should be kept in a controlled environment.
16. Caution: 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. Use only the recommended mounting apparatus to avoid damaging the device due to a fall.
18. In accordance with the IEC 704-1:1982 specifications, the sound pressure level at the operator's position does not exceed 70 dB (A).

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

**Warning!** *Because of the risk of electric shock, do not remove the equipment cover during operation or when connected to a power outlet.*



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**Caution!** To avoid short circuits and otherwise damaging the device, do not allow fluids to come in contact with the device. If fluids are accidentally spilled on the equipment, remove the affected unit from service as soon as possible. Then contact qualified service personnel to verify that staff safety has not been compromised. If the computer clock is unable to maintain accurate time or the BIOS configuration resets to the default settings, check the battery.



**Caution!** Do not replace the battery yourself. Contact a qualified technician or your retailer. The computer is equipped with a battery-powered real-time clock circuit.



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# Chapter 1

General Information

# 1.1 Introduction

Advantech's UTC-100 series comprises 15.6" and 21.5" fanless, low-power, all-in-one touch panel computers that can be deployed as control room computing devices, production line signage displays, showroom interactive signage, self-service kiosks, and public service terminals to support diverse retail, hospitality, healthcare, education, entertainment, and information processing applications. Featuring a protective enclosure, advanced touchscreen technology, wireless capabilities, and multiple I/O, UTC-100 series devices deliver high-performance computing and can be integrated with a wide range of optional peripherals and accessories according to specific application requirements.

# 1.2 Specifications

## 1.2.1 UTC-115/120G

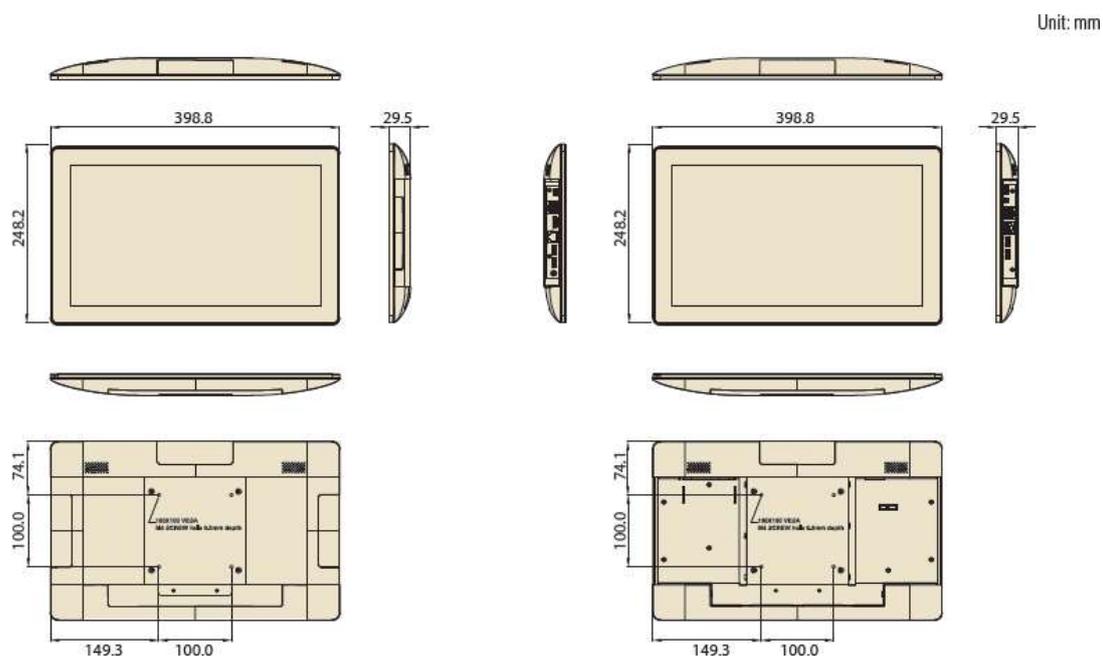
Product		UTC-115	UTC-120
Description		15.6" ubiquitous touch computer	21.5" ubiquitous touch computer
Model		UTC-115G	UTC-120G
System	CPU	Intel® Pentium® N4200	Intel® Pentium® N4200
	Cache	2MB	2MB
	Memory	1 x 204-pin SODIMM DDR3L 1600 MHz (up to 8 GB)	1 x 204-pin SODIMM DDR3L 1600 MHz (up to 8 GB)
	SSD	1 x M.2 2242 SSD	1 x M.2 2242 SSD
Display	Size	15.6" HD (FHD optional)	21.5" FHD
	Resolution	1366 x 768 (1920 x 1080)	1920 x 1080
Touch	Type	Projected capacitive	Projected capacitive
I/O	USB	4 x USB 3.0 2 x USB 3.0 (optional)	4 x USB 3.0 2 x USB 3.0 (optional)
	COM	2 x RS-232 COM (COM2 RS-232/422/485)	2 x RS-232 COM (COM2 RS-232/422/485)
	Bus Expansion	1 x M.2 Key 2230 1 x M.2 Key 2242	1 x M.2 Key 2230 1 x M.2 Key 2242
Network	LAN	2 x Gigabit Ethernet (1 with PoE)	2 x Gigabit Ethernet
OS Support		Windows 10 IoT, Linux, Android 10	Windows 10 IoT, Linux, Android 10

## 1.2.2 UTC-115/120H

Product		UTC-115	UTC-120
Description		15.6" ubiquitous touch computer	21.5" ubiquitous touch computer
Model		UTC-115H	UTC-120H
System	CPU	Intel®Core™ i5-8365UE Intel®Core™ i3-8145UE	Intel®Core™ i5-8365UE Intel®Core™ i3-8145UE
	Cache	2 MB	2 MB
	Memory	1 x 260-pin SODIMM DDR4 2400 MT/s (up to 16 GB)	1 x 260-pin SODIMM DDR4 2400 MT/s (up to 16 GB)
	SSD	1 x M.2 2242 SSD	1 x M.2 2242 SSD
Display	Size	15.6" HD (FHD optional)	21.5" FHD
	Resolution	1366 x 768 (HD) 1920 x 1080 (FHD)	1920 x 1080
Touch	Type	Projected capacitive	Projected capacitive
I/O	USB	4 x USB 3.0 2 x USB 3.0 (optional)	4 x USB 3.0 2 x USB 3.0 (optional)
	COM	2 x RS-232 COM (COM2 RS-232/422/485)	2 x RS-232 COM (COM2 RS-232/422/485)
	Bus Expansion	1 x M.2 Key 2230 1 x M.2 Key 2242	1 x M.2 Key 2230 1 x M.2 Key 2242
Network	LAN	2 x Gigabit Ethernet	2 x Gigabit Ethernet
OS Support		Windows 10 IoT Enterprise (64 bit), Linux	Windows 10 IoT Enterprise (64 bit), Linux

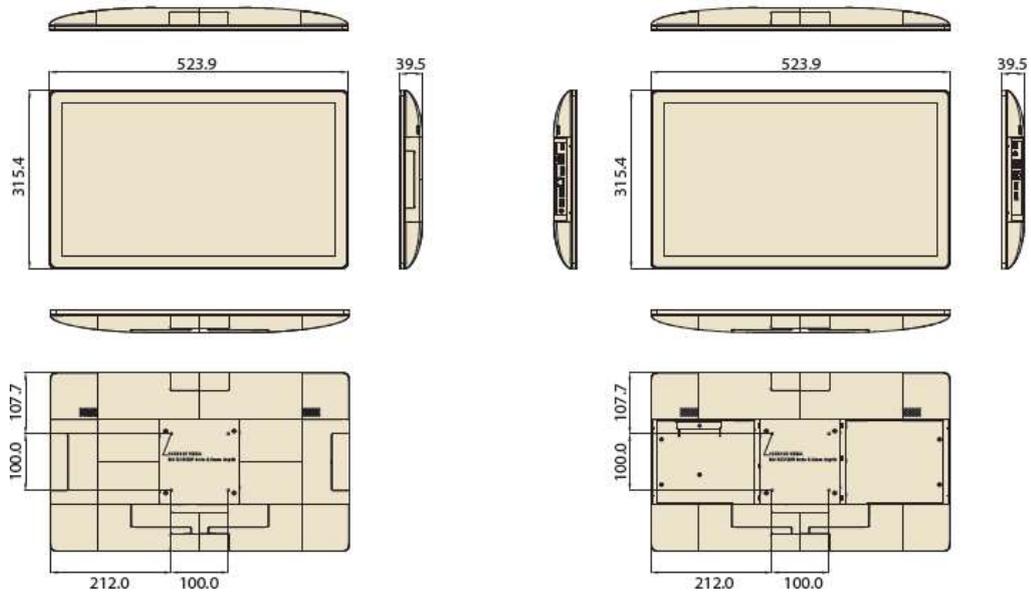
## 1.3 Dimensions

### 1.3.1 UTC-115



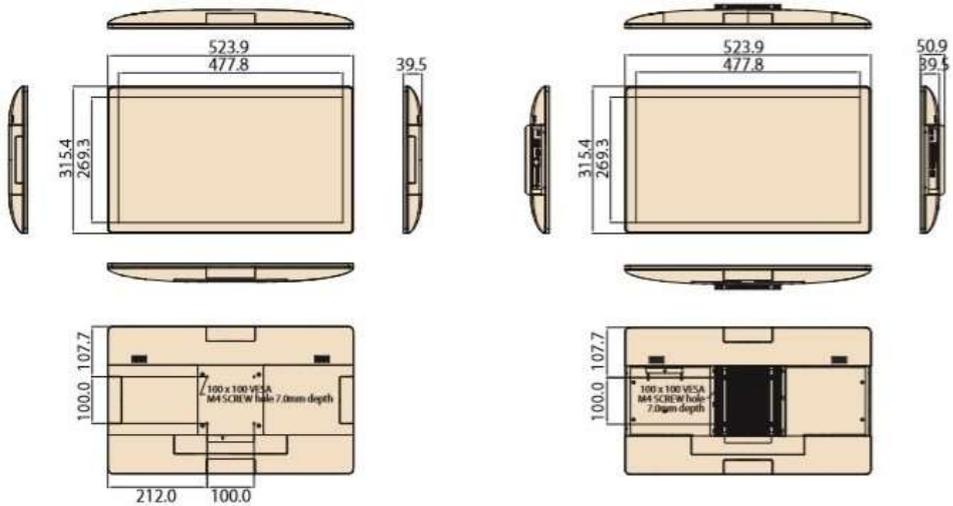
### 1.3.2 UTC-120G

Unit: mm



### 1.3.3 UTC-120H

Unit: mm



# Chapter 2

## System Setup

## 2.1 Quick Tour

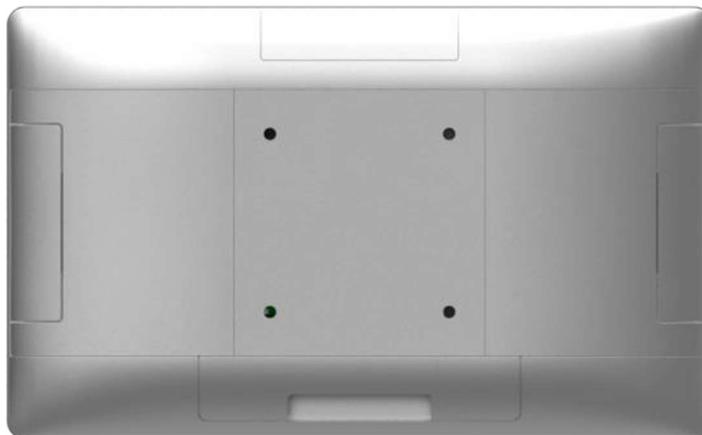
Before setting up the device, take a moment to familiarize yourself with the connector locations and functions, as shown in the images below.

### 2.1.1 Front View



Figure 2.1 UTC-115/120 with Glass Panel and PCAP Touch

### 2.1.2 Rear View

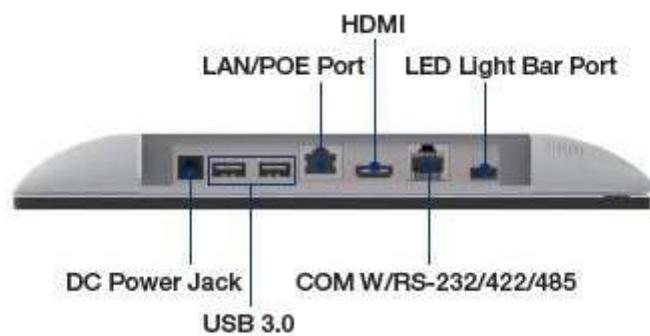


**Note!** For mounting, use only a VESA-compatible floor, stand.

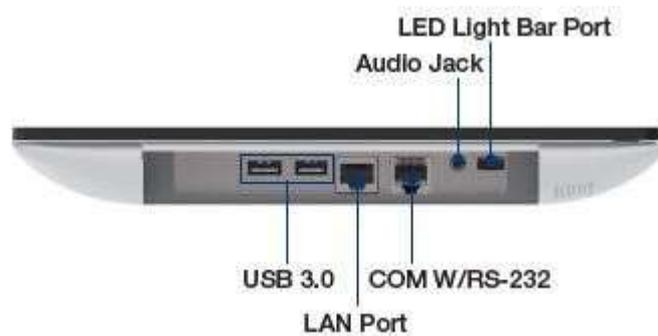


## 2.2 I/O Ports

### 2.2.1 UTC-115/120 (Right Side)



### 2.2.2 UTC-115/120 (Left Side)



---

## 2.3 Setup Procedures

### 2.3.1 System Power On

1. Connect the device to the (12V/5A or 12V/7A) power adapter provided in the shipment.
2. Hold the power cord by the plugs ends only. Refer to Section 2.2 for the location of the DC power input and power switch.
3. Press the power switch to activate the system.

### 2.3.2 BIOS Setup

In most cases, the system setup and configuration will be completed by the vendor or system integrator prior to delivery. However, users may still need to access the BIOS setup utility to adjust the system configuration settings, such as the date/time or hard drive type. The setup utility is stored in read-only memory (ROM) and can be accessed following a system reset or by pressing the <Del> key after powering on the computer. The settings configured in the BIOS setup utility are recorded in CMOS RAM memory, which is backed up by a battery to ensure the settings are retained after the system is powered off. When booting up, the system compares the settings stored in CMOS RAM with the POST self-test results. If a discrepancy is found, an error message is displayed on screen and users are prompted to run the setup program.

### 2.3.3 Software Installation

Recent releases of operating systems from major vendors include setup programs that load automatically and guide users through hard disk preparation and operating system installation. Some distributors and system integrators may have already installed software prior to shipping the product.

**Note!** *Before software or driver installation, the system must be equipped with additional storage that must be purchased separately.*



### 2.3.4 Driver Installation

After installing the system software, users can setup the Ethernet, XGA, audio, and touchscreen functions.

**Note!** *The relevant drivers and utilities are subject to change without notice. Download the latest drivers for the UTC-100 series products from the Advantech website at <http://support.advantech.com> or contact our application engineers for further assistance.*



# Chapter 3

## Hardware Installation

## 3.1 Introduction

The UTC-100 series devices are PC-based computers housed in an aluminum enclosure. To perform system maintenance or hardware upgrades, such as installing an SSD, DRAM simply remove the rear cover of the device.

**Warning!** Only remove the rear cover after verifying that there is no power flowing within the device. The device should be switched off and the power cord unplugged before opening the device enclosure.

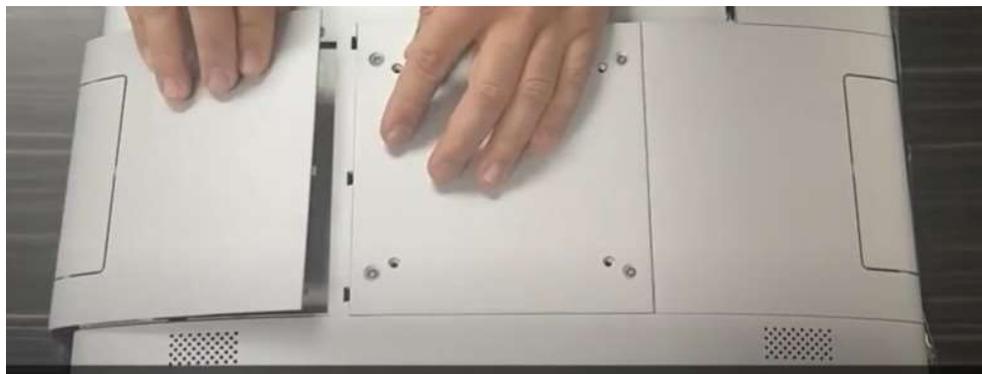


## 3.2 Remove the Side Rear Covers

1. After turning the power off and disconnecting all cables, place the UTC-100 series computer face-down on a soft, flat surface.
2. Remove the I/O cover first.

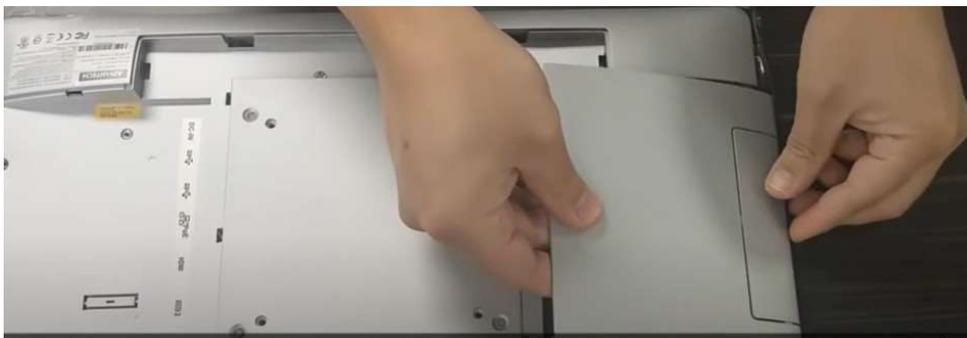


3. With your thumbs under the edge of the one side rear cover, gently lift to disengage the tabs holding the cover in place. Then slide the cover outwards to remove it.

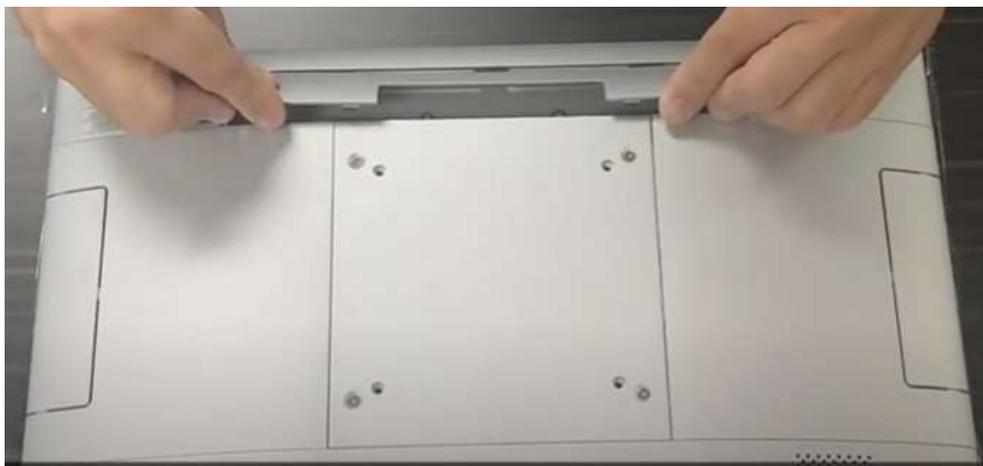


### 3.3 Replace the Side Rear Covers

1. Align the tabs of the rear cover with the slots on the enclosure while placing the cover on the computer.



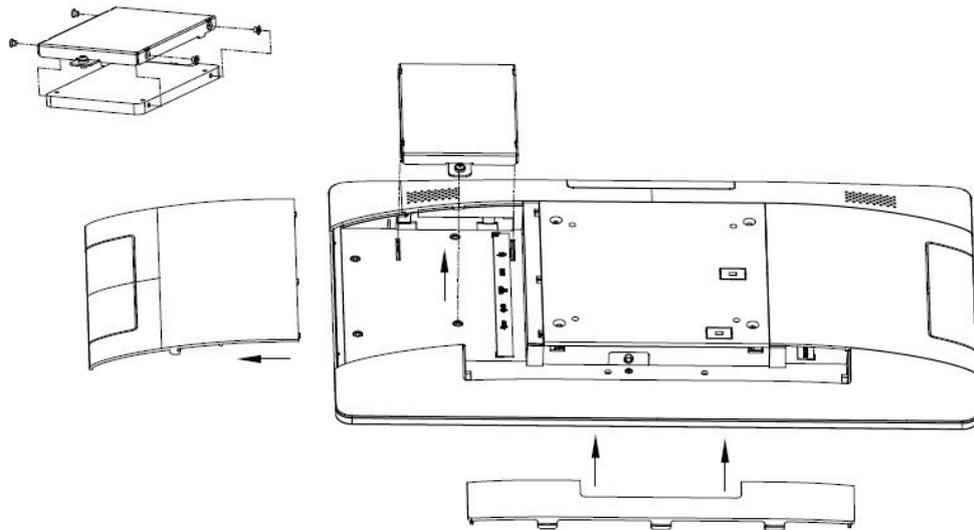
2. Press down on the cover firmly until the tabs snap into place, locking the cover securely in position. Repeat this for the bottom rear cover.



## 3.4 SATA SSD Installation

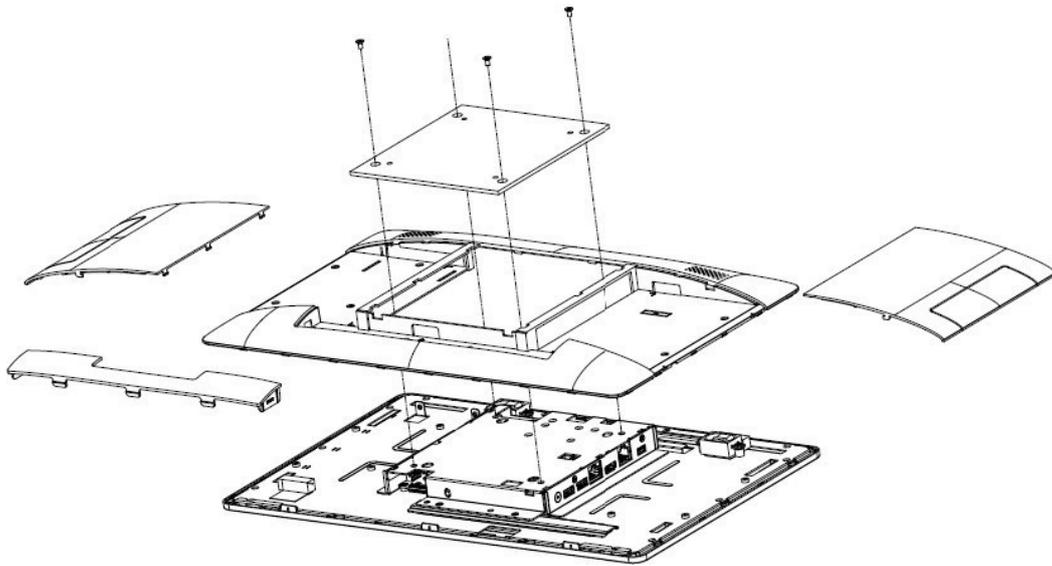
UTC-100 systems feature a 2.5" SATA SSD bay reserved for customizable storage. To install a 2.5" SATA SSD, follow the steps outlined below.

1. Remove the bottom and side rear cover.
2. Loosen the affixing screws and remove the SSD bracket.
3. Insert the SATA SSD into the SSD bracket and fasten it in place with screws.
4. Use a power cable to connect the SATA SSD to the power supply unit.
5. Use a SATA data cable to connect the SATA SSD to the motherboard.
6. Replace the side and bottom rear covers.



## 3.5 Memory Module Installation

1. Remove the bottom and side rear covers.
2. Loosen the affixing screws and remove the VESA mount plate.
3. Remove the 4 screws from the DRAM memory module heatsink.
4. Turn the memory module over.
5. Install the DRAM module in the SODIMM socket.
6. Replace the DRAM memory module heatsink and tighten the screws to affix it in place.
7. Replace the side and bottom rear covers.



---

**Appendix**

**A**

**UTC Peripherals**

## A.1 UTC-100P-B\*\*E (2D Barcode Scanner)



### A.1.1 Specifications

Interface	USB (Cable Length 50cm)
Scanning Performance	Sensor: CMOS sensor with 640 x 480 pixel resolution Illumination & Aiming: White LED illumination; Red LED dot aimer Typical frame rate: 30 frames per second Motion Tolerance: Up to 100 cm/s (4 in/s) for 13 mil UPC at optimal focus Field of View: Horizontal: 37.8°, Vertical: 28.8° Scan Angles: Tilt: 360°, Pitch: ± 45°, Skew: ± 45° Symbol Contrast: 35% minimum print contrast ratio
Typical Reading Distances Standard	SYMBOLGY / X-DIM TYPICAL RANGE* 100% UPC 55 mm to 280 mm (2.1 in to 11.0 in) 5 MIL CODE 39 61 mm to 130 mm (2.4 in to 5.1 in) 20 MIL CODE 39 60 mm to 380 mm (2.4 in to 15.0 in) 6.7 MIL PDF417 60 mm to 125 mm (2.4 in to 4.9 in) 10 MIL DATA MATRIX 60 mm to 130 mm (2.4 in to 5.1 in) 20 MIL QR 50 mm to 230 mm (2.0 in to 9.0 in) * Typical performance may be impacted by barcode quality and environmental conditions
OS Support	Windows 10 & Android
Dimensions	50.0 x 39.0 x 27.0 mm
Operating Temperature	-10°C to 40°C

### A.1.2 Packing List

Description	Quantity
Barcode Reader Unit	1
Barcode bracket	1

### A.1.3 Ordering information

P/N	Description
UTC-100P-B10E	2D Barcode Module for UTC-115
UTC-100P-B20E	2D Barcode Module for UTC-120

## A.2 UTC-100P-M\*\*E (MSR)



### A.2.1 Specifications

Interface	USB
Cable Length	50cm
Track Configuration	TRACK 1 / IATA / 210 bpi / 79 Alphanumeric Characters TRACK 2 / ABA / 75 bpi / 40 Numeric Characters TRACK 3 / Thrift / 210 bpi / 107 Numeric Characters
Card Standard	ANSI/ISO Standards 7810,7811-1~6, 7813
Read Speed	3 ips to 60 ips (7 cm/s to 150 cm/s)
Magnetic Head Life	1,000,000 times (ISO test standard)
OS Support	Windows 10 & Android
Dimensions	96.0 x 17.3 x 26.5 mm
Operating Temperature	0 ~ 40° C

### A.2.2 Packing List

Description	Quantity
Magnetic Stripe Reader Unit	1
Magnetic Stripe Reader bracket	1

### A.2.3 Ordering information

P/N	Description
UTC-100P-M10E	MSR Module for UTC-115
UTC-100P-M20E	MSR Module for UTC-120

## A.3 UTC-100P-C\*\*E (5M Camera Module)



### A.3.1 Specifications

Interface	USB
Cable Length	70cm
Image Resolution	2592 (H) x 1944 (V)
Focusing Range	10 cm~ ∞; Supports auto focus
Frame Rate	640 x 480 @ 30 fps max 1280 x 720 @ 30 fps max 1920 x 1080 @ 30 fps max 1600 x 1200 @ 15 fps max 2592 x 1944 @ 15 fps max
Video Format	MJPEG
OS Support	Windows 10 & Android
Dimensions	101.4 x 22.2 x 11.5 mm
Operating Temperature	0 ~ 40° C

### A.3.2 Packing List

Description	Quantity
Camera Module Unit	1
Camera Module Bracket	1

### A.3.3 Ordering information

P/N	Description
UTC-100P-C10E	5M Camera Module for UTC-115
UTC-100P-C20E	5M Camera Module for UTC-120

## A.4 UTC-100P-R\*\*E (RFID)



### A.4.1 Specifications

Interface	USB
Cable Length	50cm
Frequency	13.56 MHz
RFID R/W Mode	Support ISO15693, ISO14443A/B, Felica, Mifare Ultralight
NFC	Support NFCIP-1 (ISO 18092), NFCIP-2 (ISO/IEC21481)
NFC Card Mode	Simulates ISO14443A/B mode
NFC R/W Mode	Support Type 1/2/3/4
OS Support	Windows 10 & Android
Dimensions	101 x 37 x 25 mm
Operating Temperature	0 ~ 40° C

### A.4.2 Packing List

Description	Quantity
RFID Module Unit	1
RFID Module Bracket	1

### A.4.3 Ordering information

P/N	Description
UTC-100P-R10E	RFID Module for UTC-115
UTC-100P-R20E	RFID Module for UTC-120

## A.5 UTC-100P-S\*\*E (Smart Card Reader)



### A.5.1 Specifications

Interface	USB
Cable Length	50cm
Card Acceptor/ Reliability	Friction Type (ID-1) , 200,000 cycles
International Standard	Comply with PC/SC 1.0 standard and EMV L1
Compliant IC Card Standard	CPU Card: Comply with ISO7816-1,2,3,T=1 and T=0 protocol Memory Card: Synchronous 2-line, 3-line and I2C interface
LED	Dual color LED indicator
OS Support	Windows 10 & Android
Dimensions	101.0 x 34.9 x 33.8 mm
Operating Temperature	0 ~ 40° C

### A.5.2 Packing List

Description	Quantity
Smart Card reader Unit	1
Smart Card reader Bracket	1

### A.5.3 Ordering information

P/N	Description
UTC-100P-S10E	Smart Card reader for UTC-115
UTC-100P-S20E	Smart Card reader for UTC-120

## A.6 UTC-100P-L\*\*E (LED Light Bar)



### A.6.1 Specifications

Interface	USB (Cable Length:50cm)
OS Support	Windows 10 & Android
Dimensions	160.0 x 18.5 x 9.0 mm
Operating Temperature	0 ~ 40° C

### A.6.2 Packing List

Description	Quantity
LED Light Bar Unit	1
LED Light Bar Bracket	1

### A.6.3 Ordering information

P/N	Description
UTC-100P-L10E	LED Light Bar for UTC-115
UTC-100P-L20E	LED Light Bar for UTC-120

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