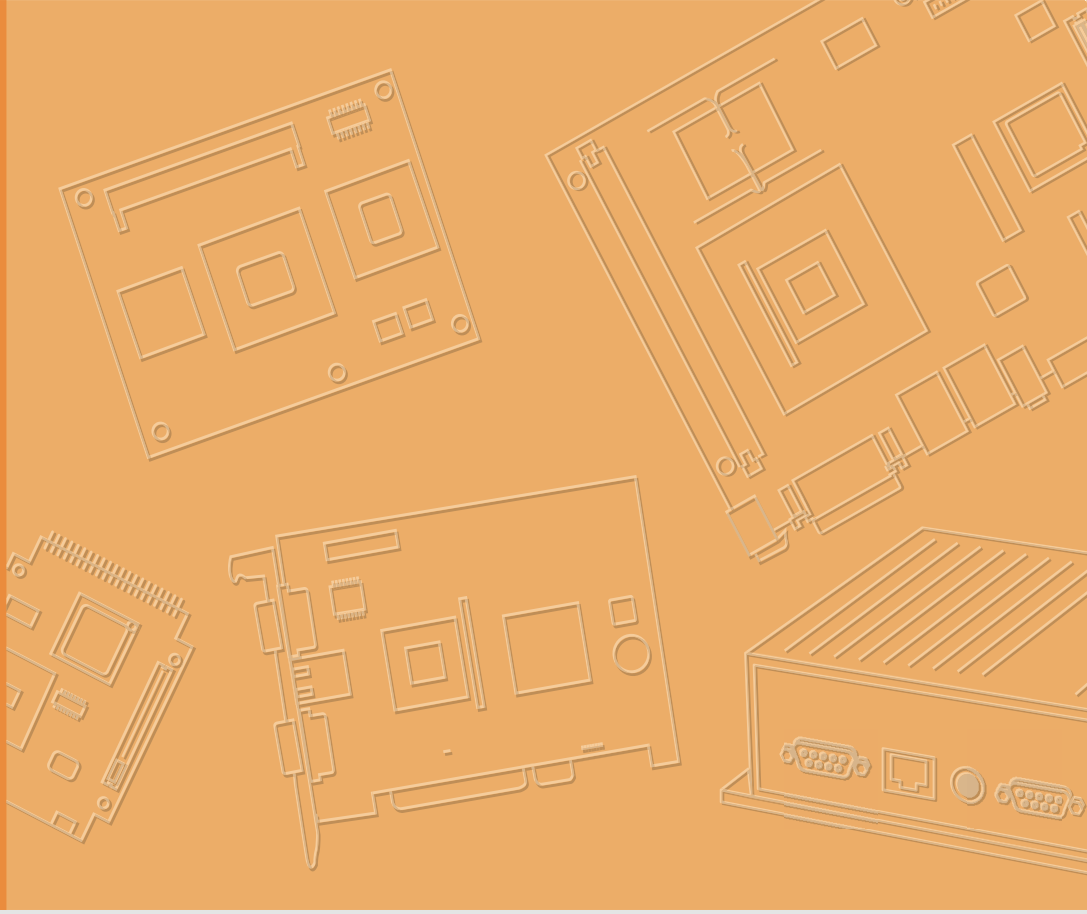

User Manual

UTC-312

11.6" Ubiquitous Touch Computer

ADVANTECH

Enabling an Intelligent Planet

Copyright

Acknowledgements

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. If an Advantech product is defective, it will be repaired or replaced at no charge during the warranty period. For out-of-warranty repairs, customers are billed according to the cost of replacement materials, service time, and freight. Please consult your dealer for more details.

If you believe your product to be defective, follow the steps below.

1. Collect all information about the problem encountered. (For example, CPU speed, Advantech products used, other hardware and software used, etc.) Note anything abnormal and list any onscreen messages displayed when the problem occurs.
2. Call your dealer and describe the problem. Have your manual, product, and any relevant information readily available.
3. If your product is diagnosed as defective, obtain a return merchandize 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 clearly on the outside, the ship the package prepaid to your dealer.

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Declaration of Conformity

FCC Class B

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 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, which can be determined by turning the equipment off and on again, the user is encouraged to try to correct the interference by implementing one or more of the following measures:

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

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

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

Technical Support and Assistance

1. Visit the Advantech website at www.advantech.com/support 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 outlets 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 the equipment from humidity.
6. Place the 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 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 conditions occur, have the equipment checked by service personnel:
    a. The power cord or plug is damaged.
    b. Liquid has penetrated the equipment.
    c. The equipment has been exposed to moisture.
    d. The equipment is malfunctioning, or does not work according to the user manual.
    e. The equipment has been dropped and damaged.
    f. The equipment has obvious signs of breakage.
15. Do not store the equipment in a environment where the temperature fluctuates below -20 °C (-4 °F) or above 60 °C (140 °F). This may damage the equipment. Instead, the equipment should be stored in a controlled environment.
16. If the computer clock consistently loses a significant amount of time or the BIOS configuration resets to the default settings, the battery has no power.

Caution!

1. *Do not replace the power adaptor yourself. Contact a qualified technician or your sales provider.*
2. *The computer is equipped with a battery-powered real-time clock circuit. Batteries are at risk of exploding if incorrectly replaced. Replace only with the same or equivalent type as recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions*
3. *During operation, the equipment may become soiled and, therefore, should be cleaned regularly using only alcohol or water.*
4. *To ensure environmental protection, follow national requirements for disposing of the unit.*

17. Classification
    - Supplied by Class I adapter
    - No applied parts
    - Continuous operation
    - No AP or APG category
18. Follow national requirements for disposing of the unit.
19. Contact information
    No.1, Alley 20, Lane 26, Rueiguang Road Neihu District, Taipei, Taiwan 114, R.O.C
    TEL: (02) 2792-7818
20. Any accessory equipment connected to the analog and digital interfaces must be in compliance with relevant national IEC standards (i.e., IEC 60950 for data processing equipment.)
21. Users must not allow SIP/SOPs to contact the patient at any time.
22. In accordance with the IEC 704-1:1982 specifications, the sound pressure level at the operator position does not exceed 70dB (A).

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

Note! *Attention. Consult all accompanying documentation thoroughly.*

Caution! *This product should only be operated using the certified power adapters listed below.*

ITE: FSP Group Inc., model FSP065-RAB, output 19 VDC, 3.42A.

ITE: FSP Group Inc., model FSP040-RAB, Output: 19VDC, 2.1A.

Note! *ISO 7010-M002: Refer to the instruction manual/booklet.*

IEC 60878: Follow the operating instructions or consult the user manual for use.

Environmental Protection

Follow national requirements for disposing of the unit.

Contents

Chapter 1

Introduction

This chapter briefly introduces the UTC-312 product.

- Overview
- System Configuration

1.1 Overview

UTC-312 is a multi-purpose all-in-one computing system that features a wide format, touch-based LCD panel and supports Windows, Android, and Linux operating systems.

Additional peripherals and display systems can be easily integrated for diverse self-service and interactive signage applications. Advantech's UTC series of touch panel computers are ideal investments for enhancing user satisfaction, furthering brand equity, and maximizing business profits. The UTC-312 products are exceptional devices for a wide of industries and sectors, including retail outlets, banks, hospitals, and medical centers.

UTC-312B Rear View

UTC-312D Rear View

Figure 1.1 UTC-312 Overview

1.2 System Configuration

A block diagram of the UTC-312 is shown below.

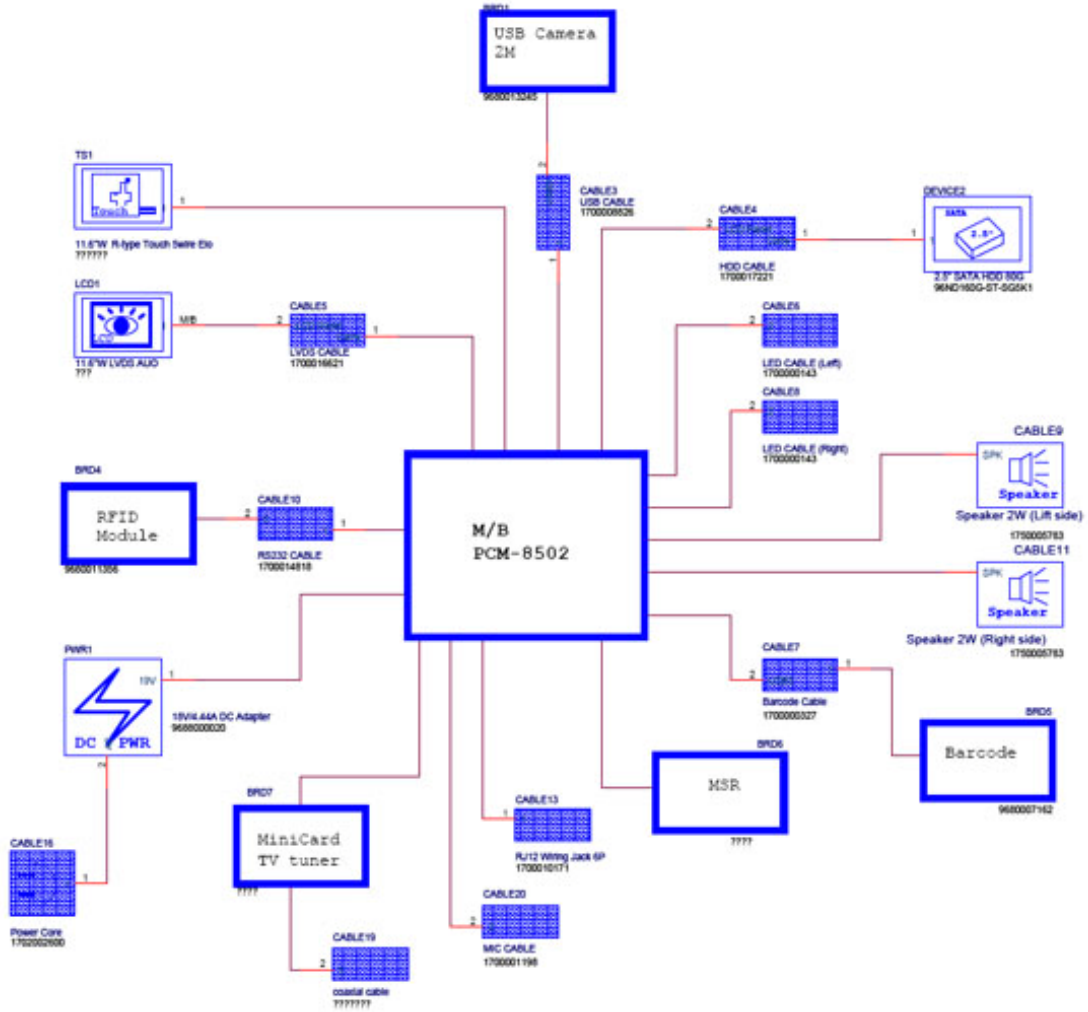


Figure 1.2 UTC-312 System Diagram

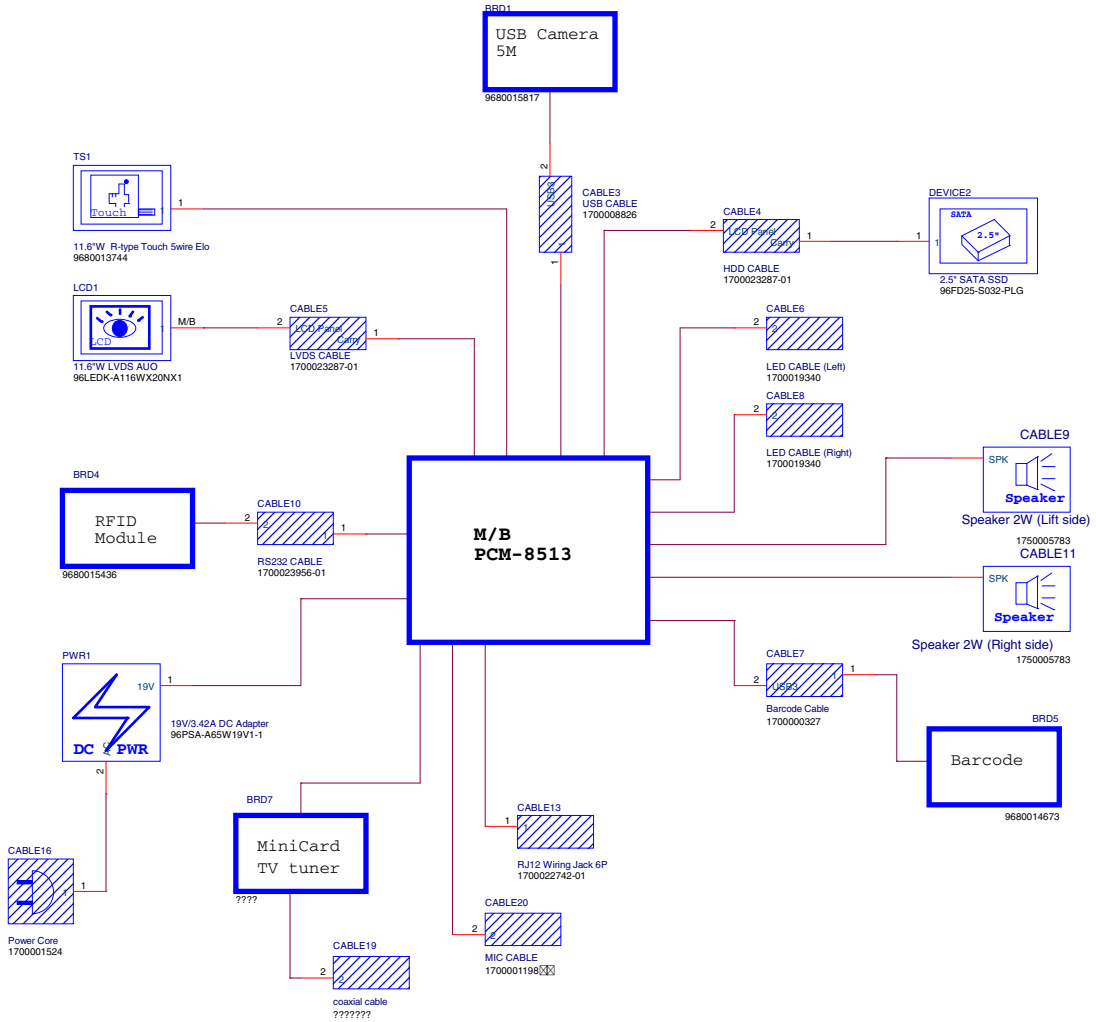


Figure 1.3 UTC-312D System Diagram

Chapter 2

Hardware Description

This chapter introduces the hardware features of UTC-312.

- General Specifications
- Mechanical Specifications
- External View

2.1 General Specifications

		UTC-312B	UTC-312D
Hardware	CPU	Intel® Atom® D510 (default)/D525 (upon request) 1.6 GHz processor	Intel® Celeron® J1900
	Front Bus	Supports FSB 667 MHz	Supports 2.0 GHz (quad-core)
	System Chipset	Intel® D510 + ICH8M	J1900
	Memory	Up to 2 GB	Up to 8 GB (default standard equipped with 4 GB)
	Storage	CF or SATA HDD interface	1 x 2.5" SATA SSD or mSATA (default standard equipped with 64 GB MLC SSD)
	Camera	5 megapixel CCD module	5 megapixel CCD module
	Bus Expansion	Mini PCIe x 2	
Display	Size	11.6" W TFT	
	Max. Resolution	1366 x 768	
	Luminance	200 cd/m2	
	Contrast Ratio	500:1	
Touchscreen	Type	Analog resistive	Projected capacitive
	Light Transmission	80%	90%
	Durability	30 million	
I/O Ports	USB	3 (2 x side, 1 x rear)	2 x USB 2.0, 1 x USB 3.0
	Smart Card Reader	1 (Removable with insert sealed by plastic change cord)	
	Line Out	1	
	Microphone In	1	
	COM Port (Isolated)	1	
Audio	Speaker	2 x 2 watt	
	Microphone	1	
Network	LAN	10/100/1000 RJ-45 x 1	10/100/1000 RJ-45 x 1 (w/ PoE, IEEE 802.3AT)
	WLAN	802.11 b/g/n	802.11 a/b/g/n, BT 4.0
Emergency Alarm	Hotkey	5 x programmable touch buttons with 2 x artwork types	
	LED Light Indicator	1	
Bus Expansion	Mini PCI Slot	2 (1 x full size, 1 x half size)	2 (1x full size, 1 x half size)
Software	Operating System	Supports WES, WES7, Win7/Linux: Fedora 13, Ubuntu	Supports WES7/8, Win7/8, Linux: Fedora 13, Ubuntu, Android 4.4
Mechanical	Mounting	VESA 75 x 75 mm	VESA 75 x 75 mm
	Dimensions (W x H x D)	302.5 x 220.25 x 43 mm	302.5 x 220.25 x 43 mm
	Weight	2.3 kg	2.3 kg

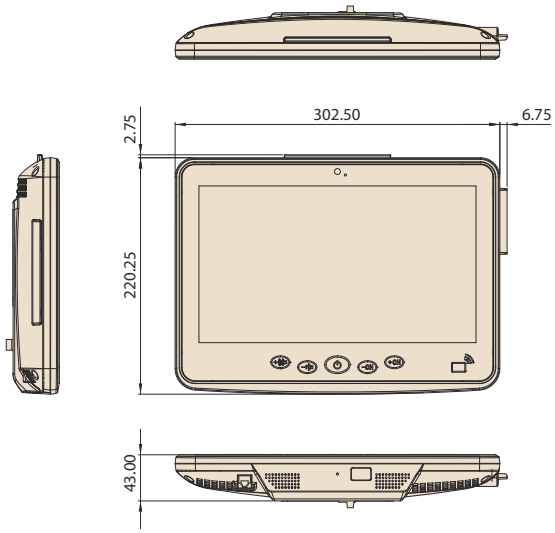
Options	TV Tuner	Yes, optional	Yes, optional (Digital/analog hybrid)
	Handset	Yes, optional	Yes, optional
	Barcode Scanner	Yes, optional. 2D type	Yes, optional. 2D type
	Table Stand	Yes, optional	Yes, optional
	RFID	Yes	Yes
Power Supply	AC/DC Adapter		
	Input Voltage	100 ~ 240 VAC, 1.1 ~ 0.45 A @ 47~ 63 Hz	100 ~ 240 VAC, 1.1 ~ 0.45 A @ 47~ 63 Hz
	Output Voltage	IT: 19 VDC, 3.42 A max.	IT: 19 VDC, 3.42 A max.
Environment	Operating Temperature	0 ~ 40 °C	0 ~ 40 °C
	IP Rating	IP65 for front panel, IPX1 for entire unit	IP65 for front panel, IPX1 for entire unit
	Vibration	1 G	1 G
	Shock	50 G	50 G
	Certifications	CE, FCC, CCC, CB, ITE UL, EN 60950	CE, FCC, CCC, CB, ITE UL, EN 60950
	Operating Humidity	20% ~ 90% (non-condensing)	20% ~ 90% (non-condensing)
	Operating Atmospheric Pressure	700 ~ 1060 hPa	700 ~ 1060 hPa
	Storage Humidity	10% ~ 95% (non-condensing)	10% ~ 95% (non-condensing)
	Storage Atmospheric Pressure	700 ~ 1060 hPa	700 ~ 1060 hPa
	Transportation Temperature	-20 ~ 60 °C	-20 ~ 60 °C
	Transportation Humidity	10% ~ 95% (non-condensing)	10% ~ 95% (non-condensing)
	Transportation Atmospheric Pressure	700 ~ 1060 hP	700 ~ 1060 hP

2.2 Mechanical Specifications

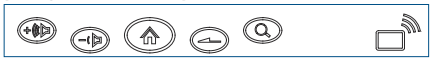
2.2.1 Mechanical Specifications (Terminal)

System Dimensions (W x H x D): 302.5 x 220.25 x 43.00 mm

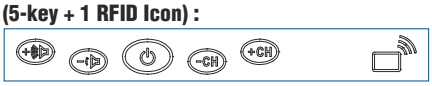
Unit: mm



Default Standard P-CAP T/S Buttons Artwork (5-key + 1 RFID Icon) :



Optional* Res. Or P-CAP T/S Buttons Artwork for Healthcare / Bedside. (5-key + 1 RFID Icon) :

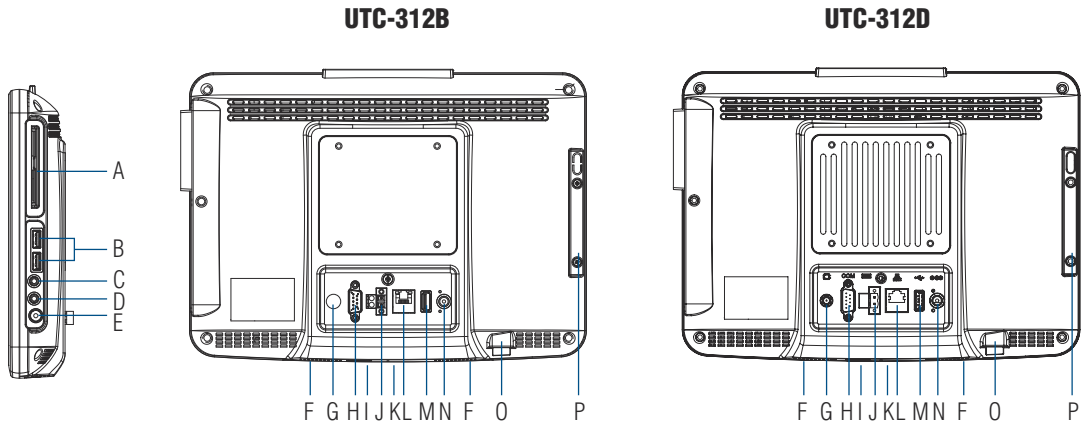


*by Project Inquiry

Carton Dimensions (W x H x D): 500 x 385 x 160 mm
Mounting System: VESA 75 x 75 mm standard mount holes
Net Weight: 3 kg
VESA Mount: 75 x 75 mm/100 x 100 mm
Screws: M4 x 10 mm

Caution! *Use suitable mounting apparatus to avoid injury.*

2.2.2 Mechanical Drawing of Rear I/O



A Smart Card Insert Tray
B USB 2.0 Port *2
C MIC In
D Line Out
E Power Switch
F Speaker x 2
G Reserved port
H Isolated COM Port
I Barcode Scanner (optional)
J 2-PIN Connector
K MIC
L RJ-45 LAN port
M USB 2.0/USB 3.0 (UTC-312D)
N DC Inlet
O RJ-12 Handset Connector
P Handset/MSR Dock

2.3 External View

2.3.1 Front View

Front View (Terminal)

2.3.2 Side and Underside View

2.3.3 Rear View

UTC-312B Rear View

UTC-312D Rear View

Chapter 3

Design Requirements

This chapter describes the design requirements of UTC-312.

- Environmental Specifications
- Reliability

3.1 Environmental Specifications

Temperature and Humidity

- Operating Temperature: 0 ~ 40 °C
- Storage Temperature: 0 ~ 60 °C
- Relative Humidity: 0 ~ 95% RH (non-condensing)

Case/Panel Temperature

- Less than 40 °C @ 25 °C ambient temperature (front bezel)

Safety

- CB, TUV, UL ITE, EN-60950, and CCC

EMI

- CE, FCC Class B, and BSMI

Vibration

- 10 ~ 18 Hz, 1.5 mm peak-to-peak displacement
- 18 ~ 500 Hz, 1 G acceleration

3.2 Reliability

System MTBF

At least 50,000 hours*

Touchscreen

- 10 million touch actuation times
-

Power Requirements

- DC Input Voltage: 19 V
- Power Consumption: <60 W

*with the specific BOM listed

Appendix A

Annex

A.1 Annex

Guidance and Manufacturer's Declaration – Electromagnetic Emissions		
The UTC-312 model is intended for use in the electromagnetic environment specified below. Users of UTC-312 should ensure that it is used in such an environment.		
Emissions Test	**Compliance**	**Electromagnetic Environment – Guidance**
RF emissions CISPR 11	Group 1	UTC-312 uses RF energy only for its internal function. Therefore, RF emissions are very low and unlikely to cause any interference to nearby electronic equipment.
RF emissions CISPR 11	Class B	UTC-312 is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Harmonic emissions IEC 61000-3-2	Class A	
Voltage fluctuations/ flicker emissions IEC 61000-3-3	Not applicable	

Recommended Distances Between Portable and Mobile RF Communications Equipment and UTC-312			
The UTC-312 model is intended for use in an electromagnetic environment where radiated RF disturbances are controlled. Users of UTC-312 can help prevent electromagnetic interference by maintaining the minimum distance between portable and mobile RF communications equipment (transmitters) and UTC-312 recommended below, according to the maximum output power of the communications equipment.			
Rated Maximum Output Power of Transmitter (W)	**Separation Distance According to Frequency of Transmitter (m)**		
	150 kHz to 80 MHz $d = 1{,}2\sqrt{P}$	**80 MHz to 800 MHz** $d = 1{,}2\sqrt{P}$	**800 MHz to 2,5 GHz** $d = 2{,}3\sqrt{P}$
0,01	0,12	0,12	0,23
0,1	0,38	0,38	0,73
1	1,2	1,2	2,3
10	3,8	3,8	7,3
100	12	12	23

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