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Vantron UCTB-27 High Performance Processor User Manual

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Vantron UCTB-27 High Performance Processor

Foreword

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Notes

Applicable notes are listed in the following table:

Sign	Notice Type	Description
	Notice	Important information and regulations
	Caution	Caution for latent damage to system or harm to personnel

Statement

It is recommended to read and comply with this manual before operating board, which provides important guidance and helps decreasing the danger of injury, electric shock, fire, or any damage to the device.

Disclaimer

Vantron assumes no legal liability of accidents resulting from failure of conforming to the safety instructions.

Limitation of Liability/Non-warranty

For direct or indirect damage to this device or other devices of Vantron caused by failure of conforming to this manual or the safety instructions on device label, Vantron assumes neither warranty nor legal liability even if the device is still under warranty.

1.6 Safety Instructions

- Keep and comply with all operation instructions, warnings, and information.
- Pay attention to warnings on this device.
- Read the following precautions so as to decrease the danger of injury, electric shock, fire, or any damage to the device.

Precautions

- Pay attention to the product labels/safety instructions printed on silk screens.
- Do not try repairing this product unless declared in this manual.
- Keep away from heat source, such as heater, heat dissipater, or engine casing.
- Do not insert other items into the slot (if any) of this device.
- Keep the ventilation slot ventilated for cooling.
- System fault may arise if other items are inserted into this device.
- Installation: ensure correct installation according to instructions from the manufacturer with recommended installation tools.
- Ensure ventilation and smoothness according to relevant ventilation standard.

Safety Instructions for Power Cables and Accessories

Proper power source only
Start only with power source that satisfies voltage label and the voltage necessary according to this manual. Please contact technical support personnel of Vantron for any uncertainty about the requirements of necessary power source.

Use tested power source

This product still contains a button lithium battery as a real-time clock after its external power source is removed and therefore should not be short-circuited during transportation or placed under high temperature.

Place cables properly:
Do not place cables at any place with extrusion danger.

Cleaning Instructions

- Please power off before cleaning the device.
- Do not use spray detergent.
- Clean with a damp cloth.
- Do not try cleaning exposed electronic components unless with a dust collector.
- Support for special fault: Power off and contact technical support personnel of Vantron in case of the following faults:
  - The device is damaged.
  - The temperature is excessively high.
  - Fault is still not solved after the operation according to the manual.

Over View

Introduction

Thank you for choosing Vantron. It is our commitment to provide our valued customers with the embedded devices equipped with the state-of-the-art technology and the best product services.
Tablet enables the interaction between operators/users and applications, connects industrial control products such as wireless, transducer, battery inside, storage, etc. Tablet adopts a display for displaying and input units such as touch screen, keyboard, audio, kind of sensors etc. for writing working parameters or inputting operation commands. As a digital device for realizing information interaction between human and machine, Tablet is composed of hardware and software. Based on its ample function interfaces and powerful user operational interface, it is very suitable for control units such as medical device, intelligent transportation, industrial field, etc. Vantron's Embedded Computer products are based on the most advanced ARM and Rockchip processors and have low-power consumption and high integration. The products are designed for applications such as industrials, medicals, and transportations etc.

Features

Specifications		
CPU	Processor	RK3288W, CPU: Quad-core Cortex-A17, up to 1.6GHz GPU: Mali-T764, up to 500MHz
Memory	RAM	2GB DDR3-1866 (Optional 4GB)
	Flash	32GB eMMC 5.1 (Optional 8GB or 16GB)
	Storage	1xMicro SD (Internal) (Optional)
	EEPROM	1Kb
Video	Video Decoder	Real-time video decoder MPEG-2, MPEG-4, H.264, VP8 H.264: 2160p @24fps (3840×2160) MPEG-4: 1080p@60fps (1920×1080) MPEG-2: 1080p@60fps (1920×1080) VP8: 1080p@60fps (1920×1080)

Display	Video Encoder	Support video encoder for H.264 Image size is to FHD (1920×1080) Maximum frame rate is up to1920x1080@30fps
	LCD	27″ TFT LCD
	Resolution	1920×1080
	Contrast Ratio	3000:1
	LCM Luminance	300 cd/m2 (Typ.)
	Support Color	16.7M colors
	View Angle	U/D 178° / R/L 178°
	LED Life Time	30000 hours (Typ.)
	Touch Screen	Cap-touch, support for 10 touch.
Camera	Front Camrea	5M Pixels Auto Focus Camera at front upper left area.
Sensor	accelerometer	3-axis accelerometer
Interfaces	TF card	1 x TF card Slot (Memory capacity to be determined) (Internal)
	Debug	1 x 3.5mm Headphone jack (Internal)
	HDMI	1 x HDMI 2.0 (Internal)
	USB	2 x USB HOST (TYPE A), standard USB 2.0 (Internal)
		1 x Micro USB, standard USB 2.0; supports OTG (Internal)
	Button	1 x Recovery button (Internal)
Wireless	WIFI&BT	WIFI: IEEE 802.11 a/b/g/n/ac; BT: 5.0 External Antenna (Optional)
	4G	Mini-PCIe slot for 4G Module or GPRS Module (Optional)
Audio	Speaker	2 x 3W speaker, Drill hole on frame a lower side. (Internal)
	MIC	1 x MIC at bottom
RTC	RTC	Supported
Software	OS	Android 6.0.1
	Applications	Provide SDK
Power	AC Input	110V/220V (50/60Hz)
Mechanical	Dimensions	674 x 413.15 x 60.3mm
	Weight	TBD
Environment Condition	Temperature	Operation: 0 ~ 50℃, Storage -20 ~ 60℃
	Humidity	Operation: 20% ~ 80%, Storage: 10% ~ 90%
Accessories	12″ AC cable	

Order information

Order Part Example	
UCTB-27 (CPA-G44-UWT4)	RK3288W ARM Quad-core, Cortex-A17 1.6GHz WI FI 802.11 a/b/g/n/ac, BT 5.0.

Hardware Instructions
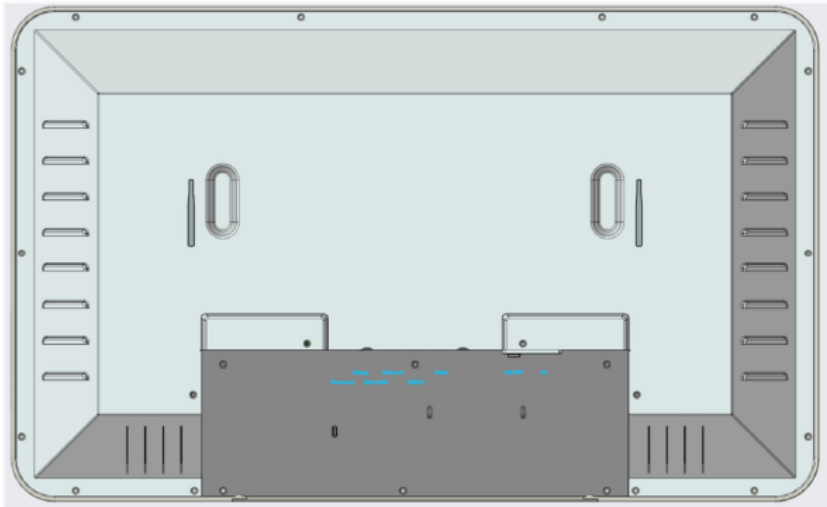
Appearance

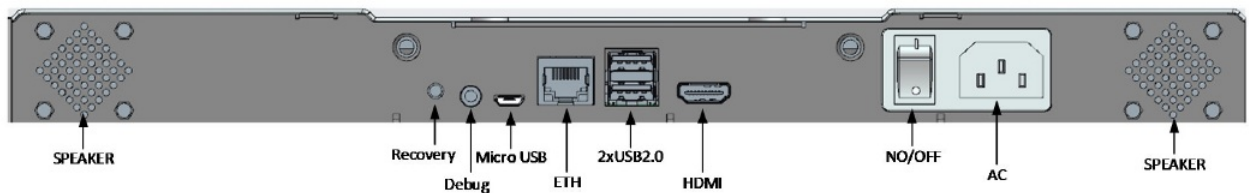Figure 3-1 : Front view|

Figure 3-2 : Back view

Interface Description

SPEAKER Recovery Micro USB 2xUSB2.0 NO/OFF SPEAKER
Debug ETH HDMI AC

Figure 3-2-1 : Interface

Camera

Figure 3-2-2

Vent hole Vent hole
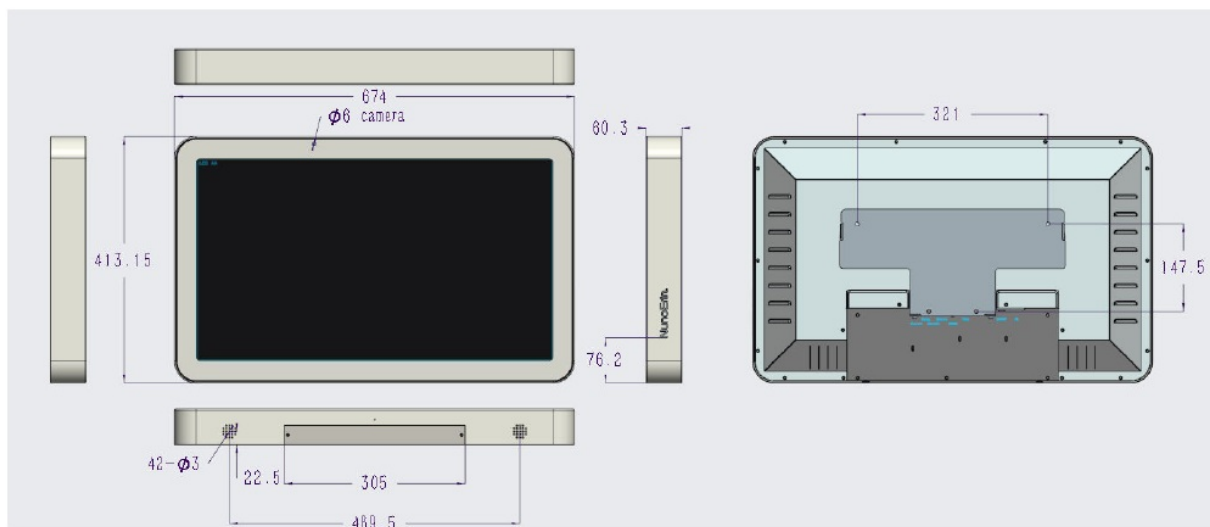MIC

Figure 3-2-3

Structure

Figure 3-3-1

Hardware Description

This chapter describes the hardware Features, include switch, jumper, connector and PIN function.
The interface description ought to consult the connector sketch map. And attach necessary message such as picture. Indicate the figure, PIN1 and match jack.

Connectors Description

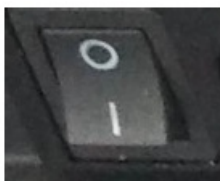This table is the respective describe valid signal of connector on VT-PNL27-RK88-T6-AGF board.

Figure type:

N/C	Not connect
GND	Ground
/	active low signal
+	Positive of difference signal
−	negative of difference signal

Signal type:

I	Input
O	Output
I/O	input/output
P	Power or ground
A	Analog
OD	Open drain
CMOS	3.3 V CMOS
LVCMOS	Low Voltage CMOS
LVTTL	Low Voltage TTL
3.3V	3.3 V signal level
5V	5 V signal level
USB	5 V tolerant signal
NC	No Connection

This button used for power on/off the display plane.

This status is power off.

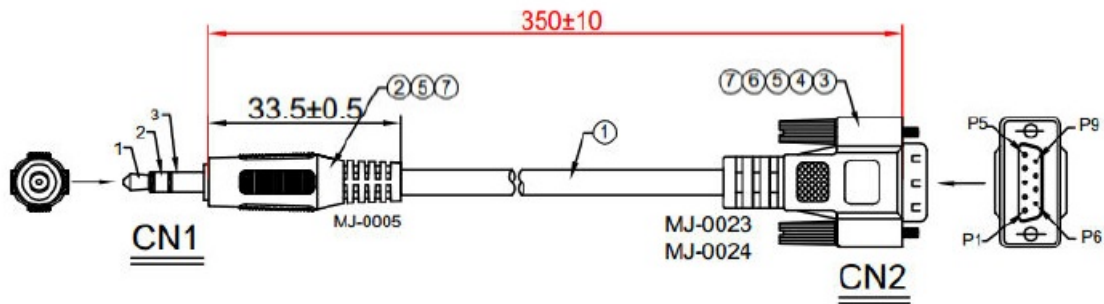**AC Jack**

This port plug in a AC100V~240V cable.

Recovery button

This button function is for update. While push the recovery button and power on the display plane, it will work at recovery mode. At this time, user can update the display plane with a micro USB-B cable.

Debug interface
The debug interface is reserved for UCTB-27 display the debug information and communicate with PC, use the

debug cable.

Micro USB

This jack is micro USB-B, used for update.

Ethernet

This jack is 1000M Ethernet, communicate with PC or other equitments.

USB 2.0

This jack is double TYPE-A USB2.0, both them worked at host mode, can connected USB device.

Video

This jack is TYPE-A HDMI, output video and voice.

Tips

Waste Disposal

It is recommended to disassemble the device before abandoning it in conformity with local regulations. Please ensure that the abandoned batteries are disposed according to local regulations on waste disposal. Do not throw batteries into fire (explosive) or put in common waste canister. Products or product packages with the sign of "explosive" should not be disposed like household waste but delivered to specialized electrical electronic waste recycling/disposal center. Proper disposal of this sort of waste helps avoiding harm and adverse effect upon surroundings and people's health. Please contact local organizations or recycling/disposal center for more recycling/disposal methods of related products.

Comply with the following safety tips:

- **Do not use in combustible and explosive environment**
  Keep away from combustible and explosive environment for fear of danger.
- **Keep away from all energized circuits.**
  Operators should not remove enclosure from the device. Only the group or person with factory certification is permitted to open the enclosure to adjust and replace the structure and components of the device. Do not change components unless the power cord is removed. In some cases, the device may still have residual voltage even if the power cord is removed. Therefore, it is a must to remove and fully discharge the device before contact so as to avoid injury.
- **Unauthorized changes to this product or its components are prohibited.**

In the aim of avoiding accidents as far as possible, it is not allowed to replace the system or change components unless with permission and certification. Please contact the technical department of Vantron or local branches for help.

- **Pay attention to caution signs.**

  Caution signs in this manual remind of possible danger. Please comply with relevant safety tips below each sign. Meanwhile, you should strictly confirm to all safety tips for operation environment.

- **Notice**

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FCC Warning

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 generate, 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.

FCC Caution
This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
Any modification to the product is not permitted unless authorized by Vantron. It's not allowed to disassemble the product, it is not allowed to replace the system or change components unless with permission and certification. Please contact the technical support department of Vantron or local branches for help.

RF Exposure Statement
This equipment must be installed and operated in accordance with provide instructions and the antenna used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operation in conjunction with any other antenna or transmitter. End-users and installers must be provided with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance.

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Documents / Resources

	[**Vantron UCTB-27 High Performance Processor**](#) [pdf] User Manual UCTB27, 2A5VA-UCTB27, 2A5VAUCTB27, UCTB-27 High Performance Processor, UCTB-27, High Performance Processor, Performance Processor, Processor

References

- _{Vantron} [**Vantron Technology**](#)