VT-TAB07-RK68H

Hardware User Manual

Product Version: 2.0

Date: 2020-10-15

For any question, please contact Chengdu Vantron Technology, Ltd.

Change History

This table describes the version and release date.

Rev.	Date	Description	Author
1.0	2020-01-17	Initial Version	YC
2.0	2020-10-15	Second release	ZGM

Foreword

Copyright

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Symbol Conventions

The symbols that may be found in this document are defined as follows.

Symbol	Type	Description
ⓘ▷	Notice	Important information and regulations
⚠	Caution	Caution for latent damage to system or harm to personnel

Statement&Disclaimer

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

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.

The device should be installed, debugged and maintained by professionals.

The outside antennas are not permitted to be installed or to be changed by non-professionals. To run the device normally, only specified antennas are approved to be assembled together by professionals.

Unit shall be used with indoor-use antenna only. No antenna for this unit can be installed outdoor.

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.

- ✧ Operations and service instructions are provided with the equipment.

- ✧ Unit shall be used with indoor-use antenna only. No antenna for this unit can be installed outdoor.

- ✧ The maximum operation temperature is 45°C.

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.

- ◆ Ensure ventilation of the ventilation slot.

- ◆ 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 standards.

Safety Instructions for Power Cables and Accessories

⚠ Use 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 operations according to the manual.

Contents

1   Introduction

1.1   Product Description

Vantron offers both ARM and ATOM based Single Boards Computer (SBC) platforms including Cirrus LogicEP9315, RockChip RK3128, RK3368, RK3288, RK3399, Freescale iMX6, iMX8, TI OMAP35xx CortexA8 series, and Intel Skylake and ApolloLake processor boards. In additional to offering the standard SBCs, we also provide professional customization board design services. Our seamless project management, efficient error-free development process, strong fundamentals in technology, sufficient in human resources, and on-time delivery will guarantee the success in your project development.

Based on idea of "Application Ready" products and services, our embedded computers have embedded basic operation system which includes the drivers of its interfaces. So it is easy to be used by adding your application software only. It can speed Time to Market of your products, and save more cost.

1.2   Connector Description

This table respectively describes the valid signal of connectors on the Vantronboard.

N/C	Not connect
GND	Ground
/	Active low signal
+	Positive of difference signal
-	negative of difference signal

I	Input
O	Output
I/O	input/output
P	Power or ground
A	Analog
OD	Open drain
CMOS	3.3V CMOS
LVCMOS	Low Voltage CMOS
LVTTL	Low Voltage TTL

3.3V	3.3V signal level
5V	5V signal level
USB	5V tolerant signal
PCIe	PCI Express signal, not 3.3V tolerant
NC	No Connection

2   Overview

2.1   Introduction

VT-TAB07-RK68H is a tablet computer designed for entertainment application. This product is based on RK3368Hwhich has Octacores and one of them is Cortex-A53with a maximum clock frequency of 1.5GHz, supporting10.1" LCD and capacity touch screen.

2.2   Feature

Specifications		
CPU	Processor	RK3368H, CPU:Octa-core Cortex-A53,up to 1.5GHz GPU:G6100,up to 600MHz
Memory	RAM	1GB LPDDR3
	Flash	8GB eMMC
	EEPROM	2Kb
Video	Video Decoder	Real-time video decoder, MPEG-2, MPEG-4,H.264,VP8 H.264: 4Kx2K@30fps(4096x2304) MPEG-4: 1080p@60fps(1920x1080) MPEG-2: 2160p@30fps (3840x2160) VP8: 2160p@24fps (3840x2160) H.265:4Kx2K@60fps (4096x2304)
	Video Encoder	Support video encoder for H.264 Image size is to FHD (1920x1080) Maximum frame rate is up to1920x1080@30fps
Display	LCD	7.0" TFT LCD
	Resolution	1024x600
	Contrast Ratio	700:1
	LCM Luminance	280 cd/m2(Typ.)
	View Angle	Full View
	Touch Screen	Cap-touch, support 5-point multi-touch.
Sensor	Accelerometer	3-axis accelerometer
Interfaces	TF card	1xTF card Slot(Memory capacity to be determined)
	Headphone	1x3.5mm Headphone jack with MIC input
	USB	1xUSB TYPE-C, standard USB 2.0; supports OTG; supports 5V/2A DC power supply
	Button	1xPower button, 2xVolume -/+ button
Wireless	WIFI&BT	WIFI: IEEE 802.11 a/b/g/n/ac; BT: 5.0

Audio	Speaker	1 x 1.0W speaker at lower left
	Headphone	1 x 3.5 mm Headphone jack with MIC input, on the top
	MIC	1 x MIC on the top
RTC	RTC	Supported
Software	OS	Android 10
	Applications	Provide SDK
Power	DC Input	USB TYPE-C supports 5V/2A DC power supply. (Recommended: 5V/2A)
	Battery	3.8V, 4000mAh Li-Battery
Design	Dimensions	203X114X14mm
	Tablet Weight	About 750g
Environment Condition	Temperature	Operating: 0 ~ 45℃ (Recommended: 25℃) storage: -20 ~ +60℃ (Recommended: 25℃)
	Humidity	10-85%RH (Non-Condensation), operating and storage
Accessories		

2.3　Order Information

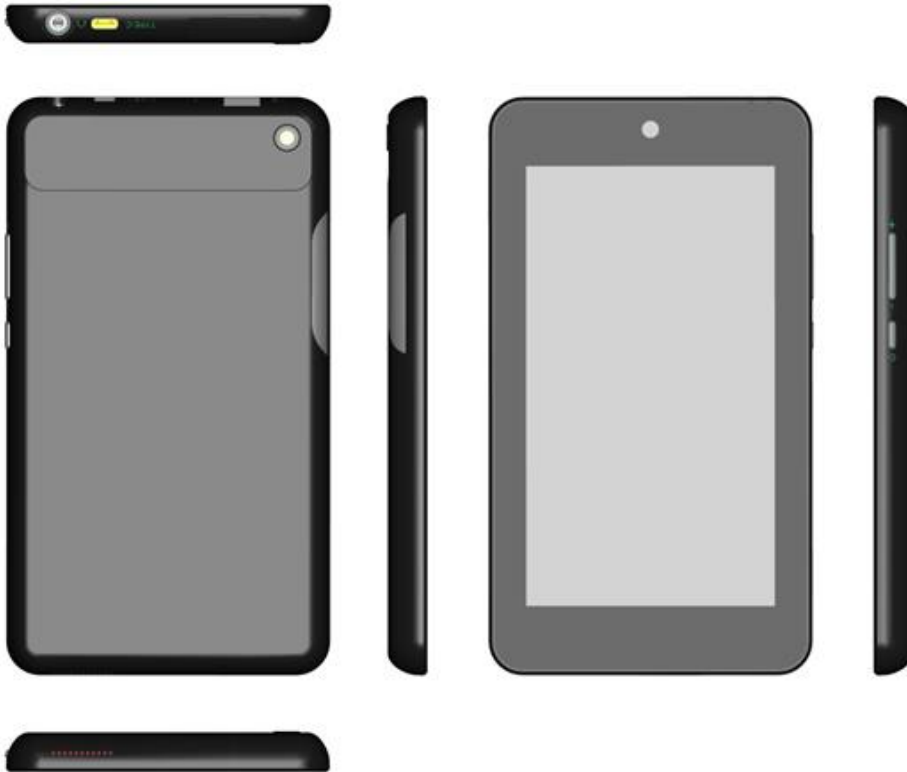| Part Order Example	
VT-TAB07-RK68H	RK3368H ARM Octa -core, Cortex-A53 1.5GHz
	WIFI 802.11 a/b/g/n/ac, BT 5.0.

Note: Please contact Vantron for other order information.

3 Hardware Instructions

3.1 Appearance

Figure 3-1 Views

3.2 Interface Description

Figure 3-2 Interfaces

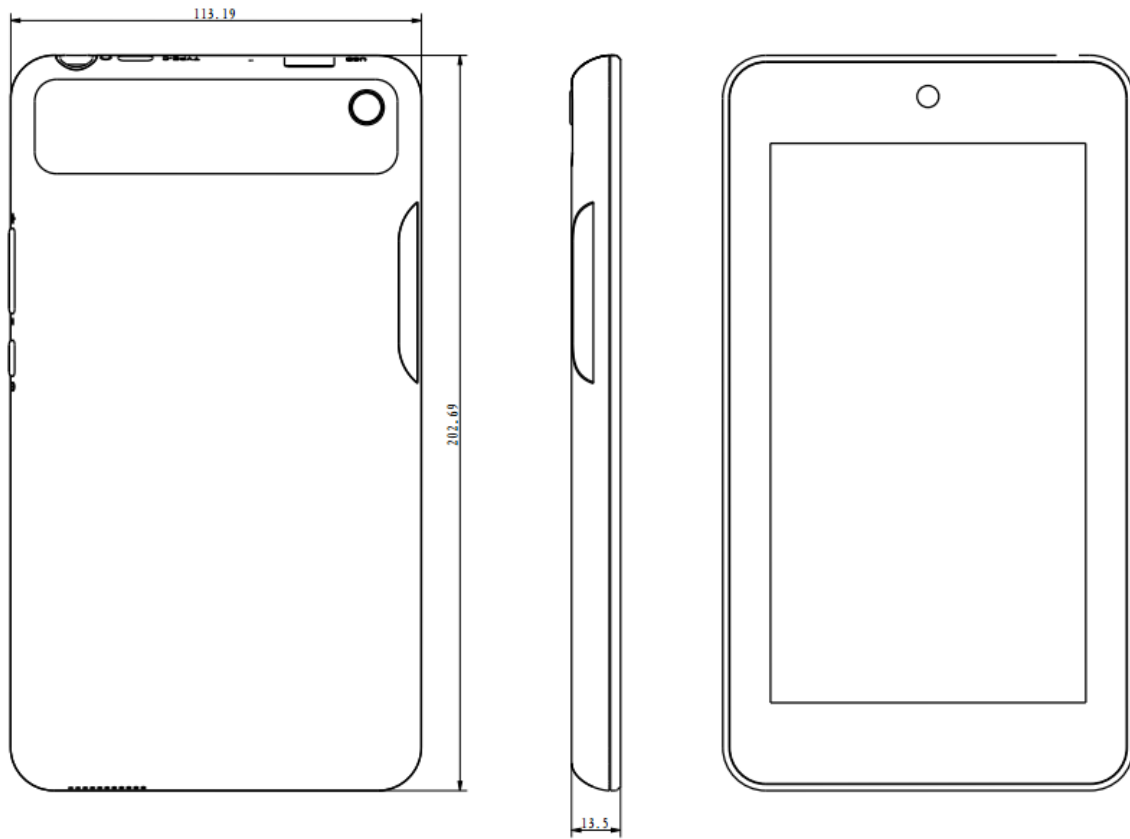MIC   USB TYPE-C   3.5mm Headphone

3.3 Structure

Download the board structure document from Vantron technology or Vantron net site:

www.vantrontech.com.cn

Figure 3-3 Structure

Unit: mm

113.19

202.69

13.5

4 Hardware Function Description

This chapter mainly describes the main hardware functions of this product, including 4G, WIFI/BT, audio, display,and charging.

4.1 WIFI/BT

The wireless module inside the tablet complies with IEEE 802.11 a/b/g/n/ac standard and it can achieve up to a speed of 433.3Mbps with single stream in 802.11ac draft to connect to the wireless LAN. The integrated module provides SDIO interface for Wi-Fi, and UART interface for Bluetooth.

Features:

- IEEE 802.11a/b/g/n/ac dual-band radio with virtual-simultaneous dual-band operation.
- Single-stream spatial multiplexing up to 433.3 Mbps data rate.
- Supports 20, 40, 80 MHz channels with optional SGI(256 QAM modulation).
- Supports Bluetooth V5.0+EDR with integrated PA for Class 1.5 and Low Energy (BLE).
- Concurrent Bluetooth, and WLAN operation.
- Simultaneous BT/WLAN receive with single antenna.
- Supports standard SDIO V3.0 and backward compatible with SDIO V2.0 host interfaces.
    -SDIO V3.0(4-bit) — up to 208 MHz clock rate in SDR104 mode
- BT host digital interface:
    -UART (up to 4 Mbps)
- IEEE Co-existence technologies are integrated die solution
- ECI—enhanced coexistence support: ability to coordinate BT SCO transmissions around WLAN receives

4.2 Audio

VT-TAB07-RK68H has a 3.5mm Headphone jack, a 1.0W Speaker and a MIC. The headphone jack supports drive-by-wire control and MIC function. If you want to use both of these features, your headphones must support them, too. Our headphone jack is compatible with three-section headphone and four-section headphone.

4.3   Display

VT-TAB07-RK68H has a 7.0" screen. The screen is made up of a display screen and a touch screen, which are fitted together by full-fit technology. More parameters are shown in the table.

Item	Specifications	Unit
Screen Size	7.0"	Inch
Viewing direction	Full View	-
Resolution	1024x600	-
Display Mode	Normally Black	-
Number of Colors	16.7M	-
LCM Luminance	280 (Typ.)	cd/m2
Contrast Ratio	700:1	-
Interface	LCDS	-
Touch Screen	Cap-touch, 5-point	

4.4   Battery and Charging

VT-TAB07-RK68H has a powerful 4000mAh battery. The time to play the video, listen to the music and standby is not confirmed. It theoretically supports 5V/2A charging, and we also provide a standard 5V/2A charger to ensure quick charging. It does not support other charger with different voltage.

Note: Please use the Vantron-provided charger.

5 Hardware Operation Note

This chapter provides a guide to set up and use some of the features of the tablet. For more details, see hardware description.

5.1 Power Preparation

5.1.1 Environment

Before the equipment is powered on, please confirm whether the environmental conditions meet the requirements. Environmental conditions are as follows:

- Operation Temperature: 0°C ~ +45°C
- Operation Humidity: 10-85%RH (Non-Condensation)

5.1.2 Type-C Power Input

Please confirm the power input is 5V, and the reference current is 2A.

Do not use unauthorized or incompatible power adaptors to charge the device,otherwise fire, explosion or other danger may be caused.

5.2 Antenna

The design of the internal antenna position of VT-TAB07-RK68H
WIFI and BT antenna frequency is 2.4G and 5G respectively.

6 Software Instructions

VT-TAB07-RK68H has been pre-loaded firmware. For more information, please refer to software user manual for software operation.

7　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 conform to all safety tips for operation environment.

⚐ Notice

Considering that reasonable efforts have been made to assure accuracy of this manual, Vantron assumes no responsibility of possible missing contents and information, errors in contents, citations, examples, and source programs.

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Caution: The user is cautioned that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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.

FCC Supplier's Declaration of Conformity

Product name :Tablet

model number :VT-TAB07-RK68H

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.

Suppliers Name: Vantron Technology,Inc.

Suppliers Address (USA) : 440 Boulder Court, Suite 300, Pleasanton,CA 94566, USA.

Suppliers phone number :925-621-8758

Appendix A: How to Contact Us

If you have any problem or want to know more about our products, visit **www.vantrontech.com**or contact us.

US Office: Vantron Technology, Inc.

Address: 440 Boulder Court, Suite 300,

Pleasanton, CA 94566, USA

Tel: 925-621-8758

Email: sales@vantrontech.com

China Office: Chengdu Vantron Technology, Ltd

Address: 6th Floor, 1stBuilding, No.9, 3rd Wu KeEast Street,

Wu Hou District, Chengdu 610045, China

Tel: 86-28-8512-3930/3931, 8515-7572/6320

Email: sales@vantrontech.com.cn