AV7

User's Manual

Chengdu Vantron Technology, Ltd.

Revision record

Date	Version	Change Description
2018-06-08	1.0	Initial Version

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1   Foreword

1.1 Copyright Notice

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1.2 Notes

Applicable notes are listed in the following table:

Sign	Notice Type	Description
![i]	Notice	Important information and regulations
⚠	Caution	Caution for latent damage to system or harm to personnel

1.3 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.

1.4 Disclaimer

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

1.5 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.

1.7 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.

1.8 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.

2   Over View

2.1 Introduction

Vantron offers both ARM and ATOM based Single Boards Computer (SBC) platforms including Cirrus Logic EP9315, Marvell PXA255, PXA270, and PXA320, Intel IXP465, FreeScale iMX31, Imx53 , iMX6, Samsung S3C6410, TI OMAP35xx CortexA8 series, and Intel ATOM Z510 and Z530 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 saving more cost.

AV7 is an A9 processor based board. The CPU is Freescale IMX6S, 1GHz, Low Power Processor. It has pin out most of the extended bus, peripherals, GPIOs, and others. It is easy to customize connector board to meet different usage.

3   AV7 Hardware Instructions

3.1   Introduction of AV7

AV7 is a POS system that is Retro-fit onto vending machine. It supports two kind of ways for payment. The first one is paying by the credit card, there is a magcard reader on the side of the machine. Another is paying by the electronic devices which has the NFC function. It is installed on the front surface of the vending machine.

3.2 Back side view of AV7

4   Hardware Description

This chapter describe 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

4.1   Identify connector

This section describe how to find the position of connector and PIN1 on AV7 single computer board.

Position of connector

As Figure 4.2 show the main part and connector position of AV7.

Confirm the pin direction

there is the pin number order in all Vantron's product, this picture at right indicate each pin's number, that message as show on the top side(component side) of main board. On double row connector, one side is naming odd number and another side is naming even number. Please according to below method to confirm the Pin1 of connector and jumper:

1.   Usually, there is any number and mark at side of connector in main board, such as trigonal mark, dot and number "1" all indicate the pin1 of connector
2.   About the hole connector, you can see pin number on the reversed side
3.   Download the AV7   mechanism from Vantron technology sustain or Vantron net site: www.vantrontech.com

4.2   Connectors Description

This table is the respective describe valid signal of connector on AV7 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
IO	input/output

P	Power or ground
A	Analog
OD	Open drain

Power and RS232 interface

HDR, 2X6, Thru, 2.54mm (SAMTEC: IPL1-106-01-L-D-K)
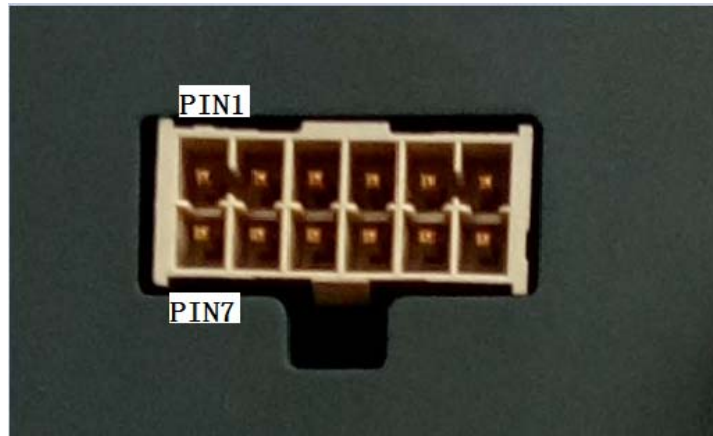
Pin	Name	Type	Description
1	MDB_34V	P	Input power 34VDC(12V-34V)
2	MRX1	IO	Data receive of MCU(Isolated)
3	MDB_COMMON	P	Isolated ground
4	DEX_R	IO	Data receive of MCU(RS232)
5	GND	P	Ground
6	USBH1-	P	Usb date-
7	GND_34	P	External ground
8	MTX1	IO	Data transmit of MCU(Isolated)
9	DEX_T	IO	Data transmit of MCU(RS232)
10	GND	P	Ground
11	USBH1+	I	Usb data+
12	USB_P	O	Usb power +5V

RF connector for 4G

NOTE : The matching 4G antenna should be installed professionally, and it is defined as an indoor product.

SIM Card Installation Instruction

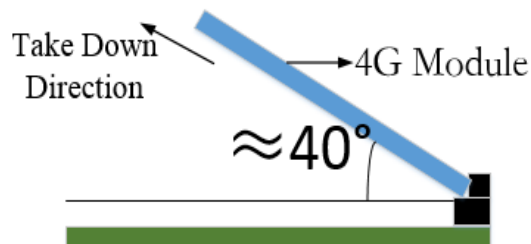a.   Remove Screw on the Back and Open the back cover

Back view

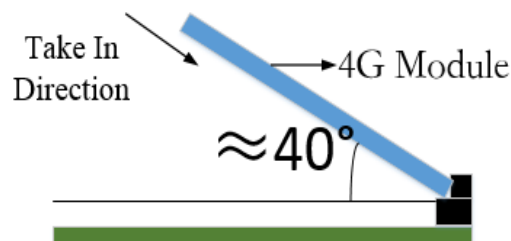b.   Remove the U.FL_MF4 and Screw From The 4G Module

4G Module

c.   Take Down The 4G module, Insert the Nano SIM Card Into the Card Holder

4G Module take down hint

d.   Take the 4G module in the MINI PCIE, Install U.FL_MF4 and Screw

4G Module take in hint

e.   Close the back cover, Install the screw

4.3 Hardware Operation Notes

a. Power prepare: Please confirm the power input is 12V. And the reference current is 1A. Make sure the power input positive is not reversed.

b. Environment: For the assembled or debug platform, be sure there hasn't any risk of circuit shortness for the board. And make sure the antistatic is done well.

c. Debug message view: Using COM port on P3 (COM1) to view the debug message. It will show the boot message. In PC side, communication hyper terminal or other serial software tools can be used. The debug port setting is: baud rate 115,200bps, NO hardware control, no ODD/EVEN checking, 1 Stop bit. Suggest use a cross cable, in two Female header.

5 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.

ℹ Notice

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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.

i FCC Warning

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.

Caution: Any changes or modifications to this device not explicitly approved by manufacturer could void your authority to operate this 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

To maintain compliance with FCC's RF exposure guidelines, this equipment should be installed and operated with a minimum distance of 20cm between the radiator and your body.

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