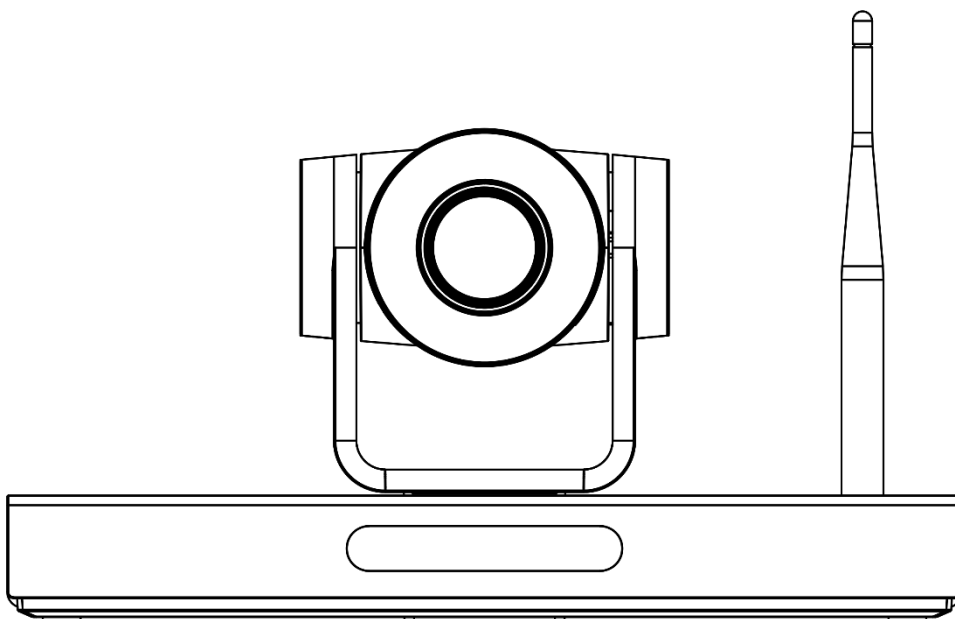


Integrated Terminal Series

AMS-R20-B Integrated Terminal

User Manual
(V1.0)



Foreword




The objective of this section is to ensure that users can effectively utilize the product by following the instructions in this manual, thereby preventing potential hazards or damage to property during operation. Prior to using this product, we strongly advise reading this product manual attentively and storing it securely for future reference.

Overview

This manual offers comprehensive guidance on operating and utilizing the AMS-R20-B Integrated Smart Terminal.

Symbol conventions

对于文档中出现的符号，说明如下所示。

Symbol	Function
 说明	Explanatory text, this type of text serves to supplement and elucidate the main content. It provides additional information and clarification to enhance understanding.
 注意	Cautionary text, this text serves as a reminder to users about critical operations or potential risks of harm and property damage. Failure to take precautions could result in accidents, equipment damage, or business interruption. Exercise care to prevent any such occurrences.
 危险	Dangerous text, this text indicates a potential high-risk situation. Failure to take precautions could lead to significant danger, potentially resulting in harm or loss of life. Extreme caution is advised to avoid such risks.

Revision History

Version	Revision Notes	Editor	Date
V1.0	Initial Release	Chester Huang	2023/5/5

Important Notes

This manual provides a comprehensive overview of the device's features, general principles, and methods for installation and operation. It is essential for users to thoroughly read this manual before proceeding with installation and use.

Usage Guidelines

To prevent damage to this product or any connected devices, it should only be used within the specified range. Please adhere to the following guidelines:

- 1) Avoid Exposure to Rain or Moisture, do not expose the device to rain or moisture.
- 2) Electrical Safety: To prevent the risk of electric shock, do not open the casing. Installation and maintenance should only be performed by qualified technicians.
- 3) Operating Conditions:
Use the product within the specified temperature, humidity, and power supply specifications.
- 4) Cleaning Instructions:
When cleaning the device lens, use a dry, soft cloth. For stubborn stains, use a mild, neutral cleaner and gently wipe. Avoid using strong or corrosive cleaners to prevent scratches on the lens, which may affect image quality.

Electrical Safety

Installation and use of this product must strictly adhere to local electrical safety standards.

Handle with Care during Transport

During transportation, storage, and installation, precautions should be taken to avoid heavy pressure, severe vibrations, or immersion that may cause damage to the product.

No Unauthorized Disassembly

Users should refrain from disassembling the product, as there are no user-serviceable parts. Damages resulting from user disassembly are not covered under warranty.

Magnetic Field Interference

At specific frequencies, electromagnetic fields may impact the device's image. This product is classified as Class A. In a residential environment, it may cause radio interference, and users should take appropriate measures.

FCC STATEMENT :

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.

Warning: 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 Radiation Exposure Statement:

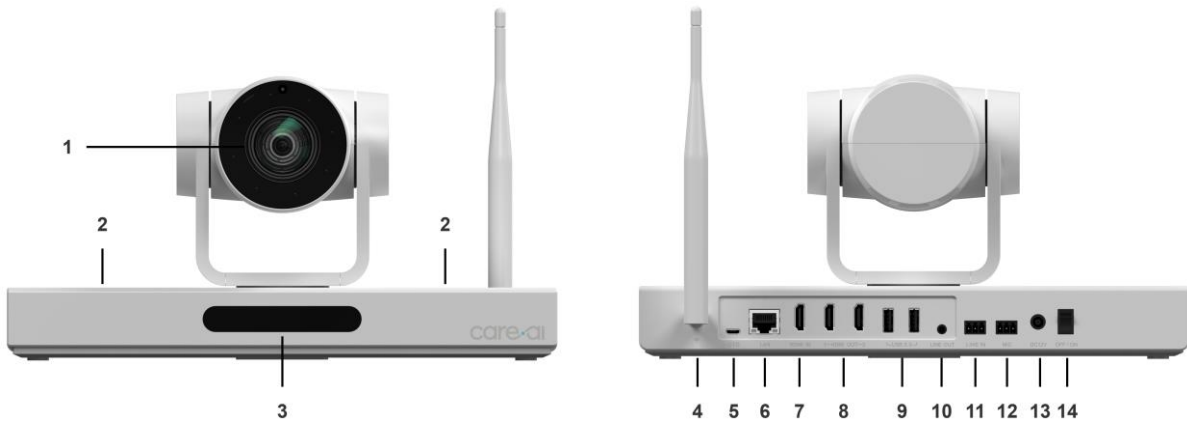
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

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1. Quick Installation Guide

1.1 Panel



NO.	Ports	Description
1	Camera	1x 2M camera
2	MIC	2x Polarized condenser microphone for voice pickup
3	IR	1x IR receiver
4	Antenna	1x Wi-Fi Antenna
5	OTG	1x Micro-USB, for device debugging
6	LAN	1x RJ45, for connecting Ethernet
7	HDMI IN	1x HDMI female port, for connecting HDMI source
8	HDMI OUT	2x HDMI female ports, for connecting HDMI displays
9	USB	2x USB 2.0
10	LINE OUT	1x 3.5mm, audio line out
11	LINE IN	1x 3-pin terminal block, audio line in
12	MIC IN	1x 3-pin terminal block, mic in, 48V Phantom power
13	DC 12V	1x DC power supply
14	ON/OFF	1x power switch

1.2 Use of Device

1. Check the hardware packaging list to confirm that the packaging is complete and the accessories are complete.
2. Connect each interface cable to the corresponding device.
3. After the correct connection, turn on the power of the host, press the power button, wait for about 10 seconds, and then turn it on. After powering on, the terminal startup screen will be displayed on the TV screen. (Note: Please switch the signal source input of the TV screen to HDMI input mode).

1.3 Video Out

HDMI output: Connect the device and monitor correctly through HDMI video cable, select the correct input source on the monitor, and the terminal system interface will appear. AMS-R20-B supports dual-screen differential display. In default mode, the output content of the two HDMI ports is the same. Software is required to control dual-screen differential display.

1.4 Audio In

- 1、 Built-in audio input: The device uses built-in dual microphones to reduce noise and pick up sound by default.
- 2、 3-pin Phoenix head linear audio input: Connect an external pickup through a 3-pin Phoenix head audio cable (when an external pickup is connected, the audio input automatically switches to the external pickup).
- 3、 3-pin Phoenix head microphone input: Connect an external microphone through a 3-pin Phoenix head audio cable and support 48V phantom power supply.

1.5 Audio Out

Linear audio output: Connect external active speakers through a 3.5mm audio cable (when an external speaker is connected, the audio output automatically switches to the external speaker).

1.6 System Interface

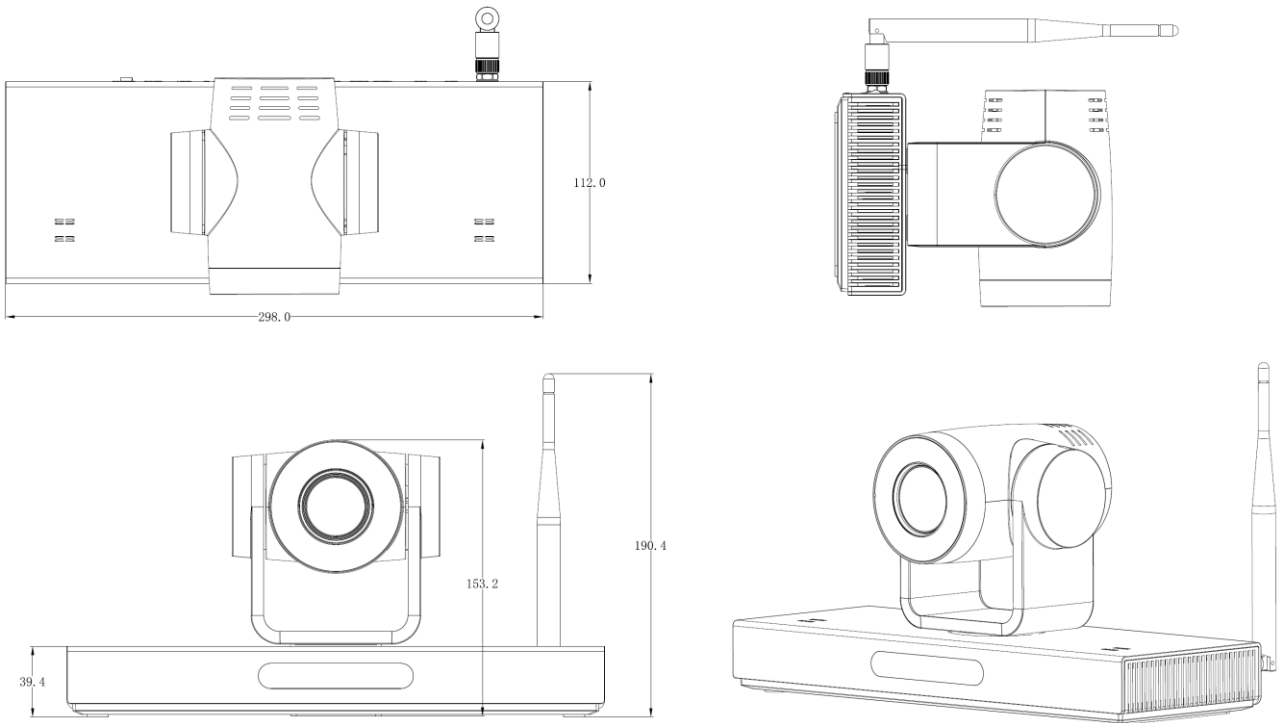
AMS-R20-B comes with Android 12, which is the native version of Android. The overall interface can be controlled by customers by connecting a mouse or keyboard through the USB port.

2. Product Description

2.1 Product Description

The Android video terminal AMS-R20-B uses a 12x optical zoom lens, a 78° wide viewing angle, and built-in intelligent echo cancellation and noise suppression audio algorithms to provide users with a high-quality conference audio-visual experience; it adopts an integrated design that integrates the Android platform, camera, Mechanical gimbal, Wi-Fi, Bluetooth, support dual-screen differential display, easy and fast wiring and installation; fully open API, built-in 8nm low-power high-performance processor, supports the development of third-party applications.

2.1.1 Dimension



2.1.2 Accessories

打开包装时，请检查并确认所有应提供的附件，产品随机附件如表 2-1 所示：

Product Name	Quantity	●Standard ○Optional
Integrated smart terminal	1	●
Remote control	1	●

AMS-R20-B Integrated Terminal

Power Adapter	1	●
HDMI 2.0 cable	1	●
CAT5 Cable	1	●
3-pin Phoenix terminal	1	●

2.2 Features

- Image sensor: 2.07 million high-quality CMOS image sensor
- Wide-angle distortion-free lens: Using a 78° wide viewing angle lens, the optical zoom reaches 12 times
- Wireless support: 2.4G / 5G dual-mode Wi-Fi, Bluetooth 5.0, convenient for customers to directly connect wireless applications, such as wireless screen projection, Bluetooth speakers, etc.
- Dual-screen differential display: supports dual-channel HDMI output, which can display the main and auxiliary streams in full screen respectively.
- Multiple video compression standards: supports H.265/H.264 video compression
- Advanced focusing technology: Advanced auto-focusing algorithm allows the lens to complete auto-focusing quickly, accurately and stably
- Low noise and high signal-to-noise ratio: Low-noise CMOS effectively ensures the ultra-high signal-to-noise ratio of camera videos. It uses advanced 2D and 3D noise reduction technology to further reduce noise while ensuring image clarity
- Fully open API: Fully open API supports the development of third-party applications and facilitates secondary development by customers to meet customization needs
- Silent pan/tilt: Using high-precision stepper motors and precision motor drive controllers to ensure smooth and noiseless pan/tilt operation.

2.3 Parameter

System	Android	Android 12
	SOC	RK3588
	RAM	8G
	ROM	32G
Camera	Sensor	2.07M
	View	D: 7.5° - 78.3° H: 6.6° - 70.2° V: 3.7° - 42°
	Zoom	12X optical zoom
	Video out	Up to 1080P
	MIC	2x Pickup MIC
Audio	Audio processing	AEC, AGC, ANS
Port	HDMI OUT	2x HDMI OUT, HDMI 2.0b, up to 4K@60Hz
	HDMI IN	1x HDMI IN, HDMI 2.0b, up to 4K@60Hz
	USB	2x USB 3.0 1x Micro USB
	Wireless	2.4G / 5G Wi-Fi, Bluetooth 5.0
	Audio out	1x 3.5mm line out 1x LINE IN, 3-pin terminal block 1x MIC IN, 3-pin terminal

AMS-R20-B Integrated Terminal

	Ethernet	1x 10/100M RJ45
	Power	1x HEC3800 DC12V
	Power Switch	On/Off

3. Remote Control



序号	接口	描述
1	Power	sleep/wake
2	Volume	Volume +&-/zoom
3	Mute	Mute
4	Switch	Switch to camera mode (in this mode you can control the camera's gimbal, etc.)
5	Back	back
6	Menu	In camera mode, can bring up the camera's menu
7	Arrow key	PTZ control

4. Maintenance and troubleshooting

4.1 Product maintenance

- 1) If the equipment is not used for a long time, please turn off the power switch when not in use, and disconnect the AC power adapter from the AC socket.
- 2) When removing dust from the device casing, please use soft cloth or tissue paper to avoid scratches.
- 3) When cleaning the device lens, please use a dry soft cloth to wipe it. If the dirt is serious, please use a neutral detergent to wipe it gently. Do not use strong or corrosive cleaners to avoid scratching the lens and affecting the image quality.

4.2 Troubleshooting

1) Video output has no picture

Solution:

- a. Check whether the power supply of the device is connected properly and whether the power indicator light is on.
- b. Check whether the device is functioning normally after powering off and restarting.
- c. Check whether the bottom DIP switch is in normal working mode (refer to Table 2-9)
- d. Check whether the video output and video monitor connection cables are normal.

2) The image sometimes disappears

Solution:

Check whether the video output and video monitor connection cables are normal

3) The remote control cannot control

Solution:

- a. Check whether the battery of the remote control is installed properly or the battery is insufficient.
- b. Check whether the equipment working mode is the normal working mode (refer to Table 2-9)
- c. Check whether the menu has not exited. After exiting the menu, you can control it normally. If the web page outputs an image, the menu will not be displayed and no operation will be performed. The menu will automatically exit after 30 seconds and you can control it.

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