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## Runpu RP-HD66A-20N

# Runpu NDI PTZ Camera RP-HD66A-20N User Manual

Model: RP-HD66A-20N

## 1. INTRODUCTION

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This manual provides detailed instructions for the installation, operation, and maintenance of your Runpu NDI PTZ Camera, model RP-HD66A-20N. This camera is designed for professional video applications, including live streaming, video conferencing, and broadcast, featuring NDI|HX support, 20x optical zoom, and AI auto-tracking capabilities.

## 2. PRODUCT OVERVIEW

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### 2.1 Key Features

- **NDI|HX Support:** Official NDI integration for stable, high-quality video transmission over IP networks, compatible with various streaming software like vMix, OBS, and Zoom.
- **AI Auto-Tracking:** Advanced AI algorithm enables human shape tracking, face recognition, and automatic frame selection, suitable for capturing presenters or subjects in dynamic environments.
- **20x Optical Zoom:** Provides high-quality remote shooting with a 60.7° wide field of view, allowing for detailed capture from a distance.
- **Multiple Video Output Interfaces:** Simultaneous output via HDMI, LAN/Ethernet, USB3.0, and SDI. Supports protocols such as SRT, RTMP, and VISCA.
- **Power over Ethernet (PoE):** Simplifies installation by providing power and data transmission through a single network cable.
- **Full HD 1080P at 60fps:** Delivers clear and fluid video output.
- **Low Light Performance:** High SNR CMOS sensor combined with 2D & 3D noise reduction ensures performance in low light conditions.

### 2.2 Package Contents

Verify that all items are present in the package:



# Best Cameras for Churches, Live Streaming



*Image: The package contents typically include the Runpu NDI PTZ Camera unit, an IR remote control, a power adapter, a USB cable, an HDMI cable, and a wall-mount bracket.*

- Runpu NDI PTZ Camera Unit
- IR Remote Control
- Power Adapter
- USB Cable
- HDMI Cable
- Mounting Bracket
- User Manual (this document)

## 2.3 Camera Components



*Image: This image displays the main camera unit, highlighting its lens, pan/tilt mechanism, and base. The included remote control and a wall-mount bracket are also shown.*

The camera features a high-quality optical lens, a pan-tilt mechanism for movement, and a base with status indicators (STANDBY, POWER). The rear panel contains all input/output ports for connectivity.

## 3. SETUP

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### 3.1 Physical Installation

The camera can be placed on a flat surface or mounted using the provided bracket. Ensure the camera is stable and positioned to capture the desired area.

### 3.2 Connecting the Camera

# Rich Interface Adapt to Different Devices

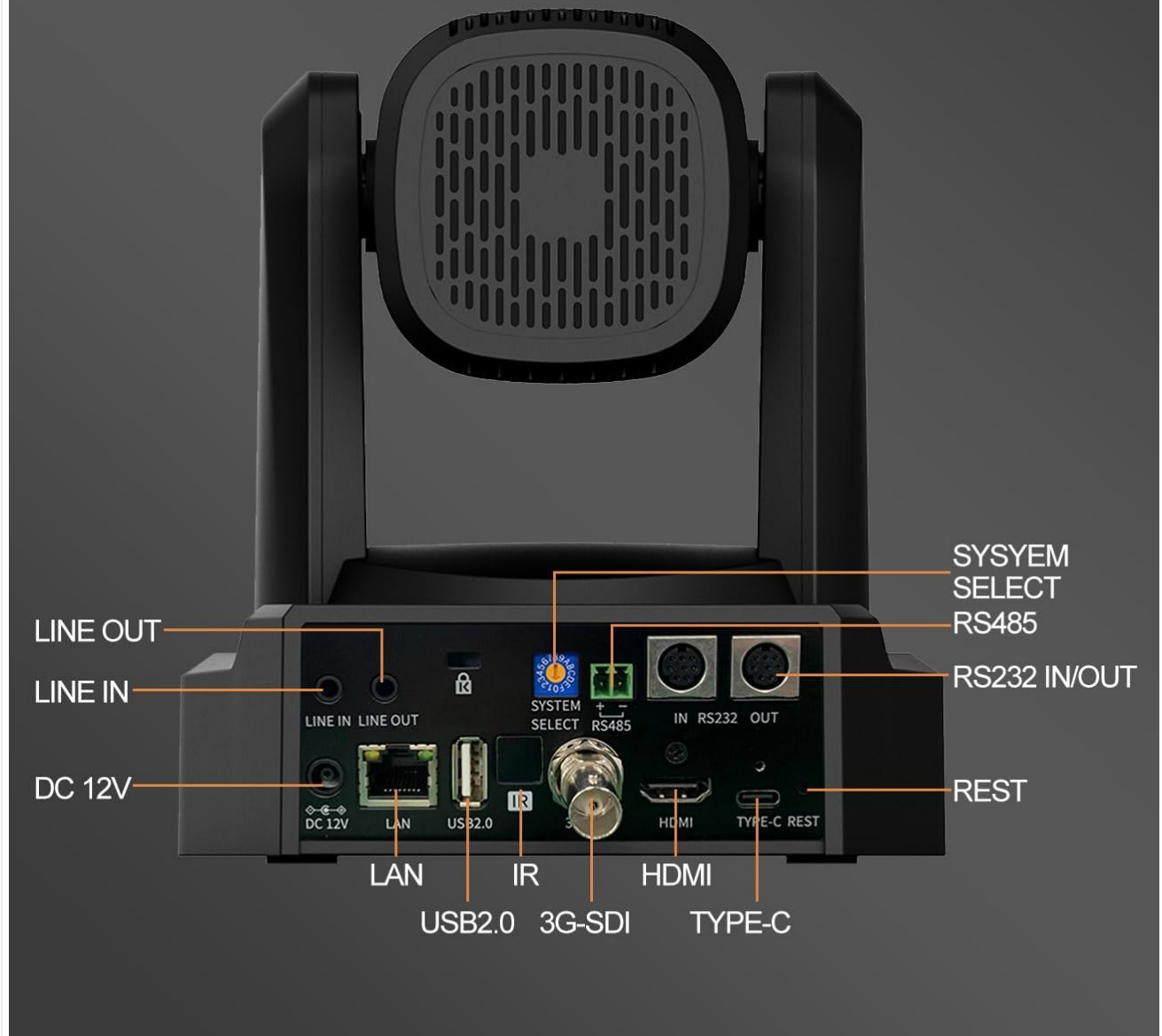


Image: The rear panel of the camera features ports for DC 12V power, LAN (Ethernet), USB2.0, IR, 3G-SDI, HDMI, Type-C, RS232 IN/OUT, RS485, and Line IN/OUT audio.

- 1. Power Connection:** Connect the provided power adapter to the DC 12V port on the camera and plug it into a power outlet. Alternatively, if using PoE, connect an Ethernet cable from a PoE-enabled switch to the LAN port.
- 2. Video Output:** Connect the camera to your display or capture device using one of the following ports:
  - **HDMI:** For direct connection to a monitor or video switcher.
  - **SDI:** For professional video workflows requiring longer cable runs.
  - **USB3.0:** For direct connection to a computer for use as a webcam or capture device.
  - **LAN (Ethernet):** For NDI streaming and IP control.
- 3. Audio Connection:** Use the LINE IN and LINE OUT ports for external audio input and output if required.

4. **Control Interface:** Connect control devices via RS232, RS485, or the LAN port for IP control.

### 3.3 Initial Power On

After connecting power, the camera will perform a self-test, indicated by the pan and tilt mechanism moving. The POWER indicator light will illuminate.

## 4. OPERATING INSTRUCTIONS

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### 4.1 Basic Camera Control (Remote)

The included IR remote control allows for basic pan, tilt, and zoom adjustments.

Your browser does not support the video tag.

*Video: This video demonstrates the physical connections to the camera's rear panel, including power, HDMI, and control cables. It also shows the camera's pan and tilt movements controlled by the remote, illustrating the range and speed of motion.*

- Use the arrow keys to pan (horizontal movement) and tilt (vertical movement) the camera.
- Use the 'Zoom +' and 'Zoom -' buttons to adjust the optical zoom.
- The camera supports a pan range of 355° (max speed 80°/s) and a tilt range of -30° to +90° (max speed 60°/s).
- Preset positions can be saved and recalled using the numbered buttons on the remote.

### 4.2 AI Auto-Tracking

# AI Human Auto-Tracking



*Image: This image illustrates the AI Human Auto-Tracking feature, showing a green box around a person, indicating that the camera is actively tracking the subject's movement.*

The AI auto-tracking feature allows the camera to automatically follow a designated speaker or subject. Refer to the camera's web interface or advanced control software for specific instructions on activating and configuring AI tracking modes.

## 4.3 NDI Protocol Usage

# NDI protocol for low-latency transmission of audio and video

Compliant with NDI standards, it provides controlling, switching and streaming for live cameras with low latency over an IP connection. It makes live streaming faster and simpler, allowing users to stream for larger audiences without complicated and expensive equipment

NDI<sup>®</sup> | HX2

Full NDI support

*Image: This graphic highlights the NDI|HX2 protocol, emphasizing its capability for low-latency transmission of audio and video over an IP connection, enabling faster and simpler live streaming.*

The camera supports the NDI|HX protocol for low-latency video and audio transmission over a standard IP network. To use NDI, connect the camera's LAN port to your network. The camera will appear as an NDI source in compatible software (e.g., vMix, OBS, Wirecast). Configuration of NDI settings, such as stream quality and bandwidth, can be done through the camera's web interface.

## 4.4 Control Methods

# How to Control Your Camera



Image: This diagram illustrates multiple ways to control the camera, including RS-232/RS-485 with a serial joystick, IR remote control, LAN with a network PoE switch, Ethernet with APP/Software (Mac/Windows), Ethernet with a network joystick, and Ethernet via a web browser.

The camera offers flexible control options:

- **IR Remote Control:** For direct, line-of-sight control.
- **Serial Control:** Via RS-232 or RS-485 using a compatible serial joystick controller.
- **IP Control:** Through the LAN port, allowing control via a web browser interface, dedicated software applications (for Mac/Windows), or a network joystick.

## 5. MAINTENANCE

To ensure optimal performance and longevity of your camera, follow these maintenance guidelines:

- **Cleaning:** Use a soft, dry cloth to clean the camera body. For the lens, use a lens cleaning cloth and specialized lens cleaning solution. Avoid abrasive cleaners or solvents.
- **Environment:** Operate and store the camera in a clean, dry environment, away from extreme temperatures, humidity, and direct sunlight.
- **Firmware Updates:** Periodically check the manufacturer's website for firmware updates to ensure your camera has the latest features and performance enhancements.

## 6. TROUBLESHOOTING

Problem	Possible Cause	Solution
No video output	Incorrect cable connection; Power issue; Incorrect input selection on display.	Verify all video cables (HDMI, SDI, USB, LAN) are securely connected. Ensure the camera is powered on. Select the correct input source on your display or capture device.
Camera not responding to remote control	Remote batteries low/dead; Obstruction between remote and camera; Incorrect camera ID selected.	Replace remote batteries. Ensure clear line of sight to the camera's IR receiver. Check if the correct camera ID is selected on the remote.
AI Auto-Tracking not working	Feature not activated; Insufficient lighting; Subject too far or obscured.	Activate AI tracking via the camera's web interface. Ensure adequate lighting. Position the subject within the recommended range and ensure they are not obscured.
NDI stream issues (lag, disconnects)	Network congestion; Incorrect NDI settings; Firewall blocking.	Ensure a stable network connection. Check NDI settings in the camera's web interface. Verify firewall rules on your network allow NDI traffic.

## 7. SPECIFICATIONS

- **Brand:** Runpu
- **Model Number:** RP-HD66A-20N
- **Color:** Black
- **Item Weight:** 7.09 pounds
- **Package Dimensions:** 11.25 x 10.13 x 9.38 inches
- **Photo Sensor Technology:** CMOS (1/2.8" SONY CMOS Sensor, 2.07 megapixels)
- **Video Capture Resolution:** 1080p (up to 60fps)
- **Optical Zoom:** 20x
- **Field of View:** 60.7° (wide)
- **Connectivity Technology:** HDMI, SDI, USB3.0, LAN (Ethernet)
- **Supported Protocols:** NDI|HX, SRT, RTMP, VISCA
- **Special Features:** NDI|HX2 Protocol, AI Auto Tracking, PoE Support, Tally Light
- **Pan Range:** 355°
- **Tilt Range:** -30° to +90°
- **Preset Positions:** 255

## 8. WARRANTY AND SUPPORT

The Runpu NDI PTZ Camera RP-HD66A-20N comes with a **3-Year Limited Warranty**. For technical assistance, online training, or any inquiries, please contact Runpu customer support. When contacting support, please provide your Order ID for efficient service. Remote assistance for setup is available if necessary.