



NearStream



VM20

V2.0
English

Contents

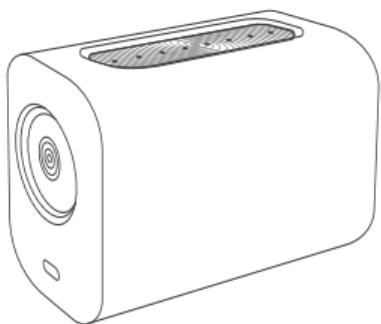
What's in the Box	03
Power & Startup	03
Power the Camera	03
Turn On	03
Camera Overview (Parts & Indicators)	04
Choose Your Setup (Recommended Configurations)	05
Connect Your Camera	06
USB Mode – Plug & Play	06
HDMI Mode – Professional Multi-Camera	07
Network Mode – RTSP Streaming	08
Basic Controls (Remote)	09
Status Light Guide	10
Front LED Indicators	10
Network Port Indicators	10
Quick Troubleshooting	10
Software & Streaming Setup	11
Start Your Live Stream in Minutes	11
Network Streaming – Single Camera	13
Network Streaming – Multi-Camera (PoE Switch)	13
VLC Preview (Optional)	13
Workflow Tips	14
Firmware Upgrade	15
Specifications	16
Quick Answers & Compatibility Guide	17

NearStream VM20 Overview

About VM20

The NearStream VM20 is a professional-grade 4K USB streaming camera designed for creators, educators, and enterprise professionals. It features a 10X optical zoom (up to 40X hybrid) and a built-in 8-MEMS noise-canceling microphone array for studio-quality audio. Beyond standard USB connectivity, the VM20 offers versatile **HDMI and RJ45 (RTSP)** support to accommodate multi-camera production and network-based streaming.

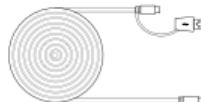
What's in the Box



Product host*1



RF Remote Control*1



USB Cable*1



User Manual*1
Warranty Card*1

Power & Startup

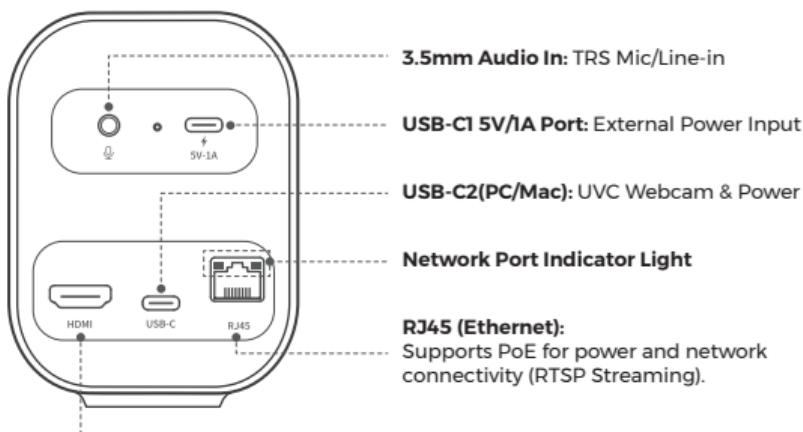
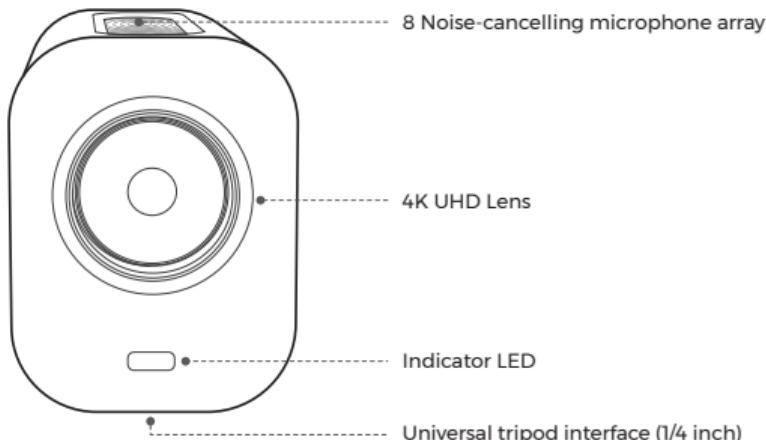
Power the Camera

- Connect the USB cable to the OTG USB-C port and your computer
- For low-power devices, connect a 5V adapter to the power port
- For network use, connect the Ethernet cable to a powered switch

Turn On

- The camera powers on automatically when connected
- Use the remote to enter standby if needed

Camera Overview (Parts & Indicators)



HDMI Output:
Low-latency Video Output to a monitor, switcher, or capture card.

Choose Your Setup (Recommended Configurations)

Item	Starter Setup (Solo Creator / Remote Work)	Advanced Setup (Studio / Church / Live Production)
Best For	Plug & play, simple 4K@30fps connection.	Multi-camera production and network streaming.
Hardware	VM20 Camera.	VM20 Camera (x2 or more).
Connectivity	Included USB-C Cable.	HDMI / Video Switcher / PoE Switch.
Software Support	Not Required (Plug & Play).	Required (NearSync/RTSP configuration).
Audio	Built-in 8-Mic Array.	External 3.5mm Wireless Mic. (NearStream AWM20T)
Mounting	Desktop Stand / Tripod.	Multi-arm Desk Mount.
Lighting	Natural / Ring Light. (NearStream SL40)	Pro Three-Point Lighting. (NearStream SL40)

Connect Your Camera

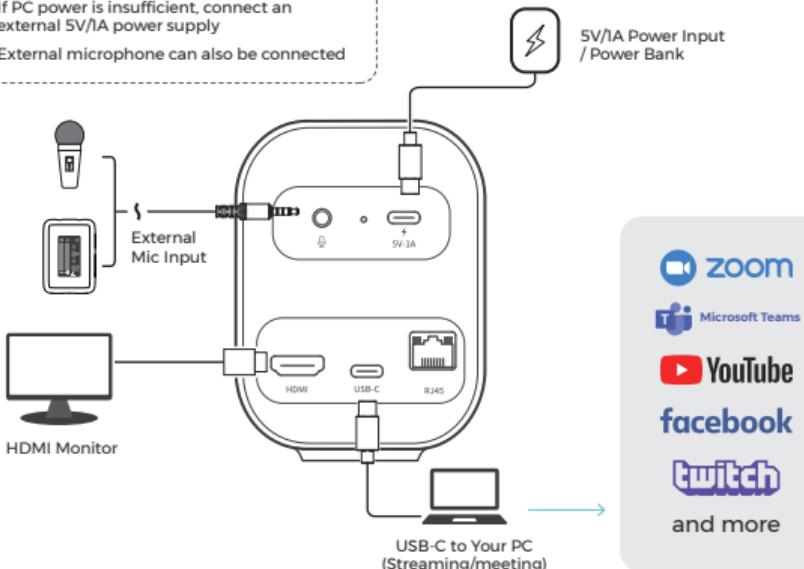
USB Mode - Plug & Play



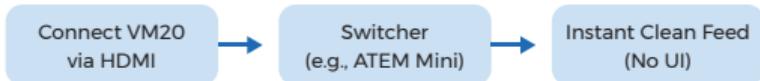
1. Connect the USB-C cable from the camera to your PC.
2. Select "**NearStream VM20**" in your preferred software (Zoom/OBS).
3. Use the **remote control** to adjust your frame and save presets by long-pressing the number buttons.

Notes:

- HDMI → Monitor (optional) for live preview
- If PC power is insufficient, connect an external 5V/1A power supply
- External microphone can also be connected



HDMI Mode - Professional Multi-Camera



The VM20 supports two primary workflows for routing high-quality video to your PC or monitor:

- **Workflow A (Capture Card Solution):**

Connect the camera via HDMI to an **HDMI Switch**.

The switch then connects to a **Capture Card** (such as the NearStream CCD10), which outputs to your PC via **USB**.

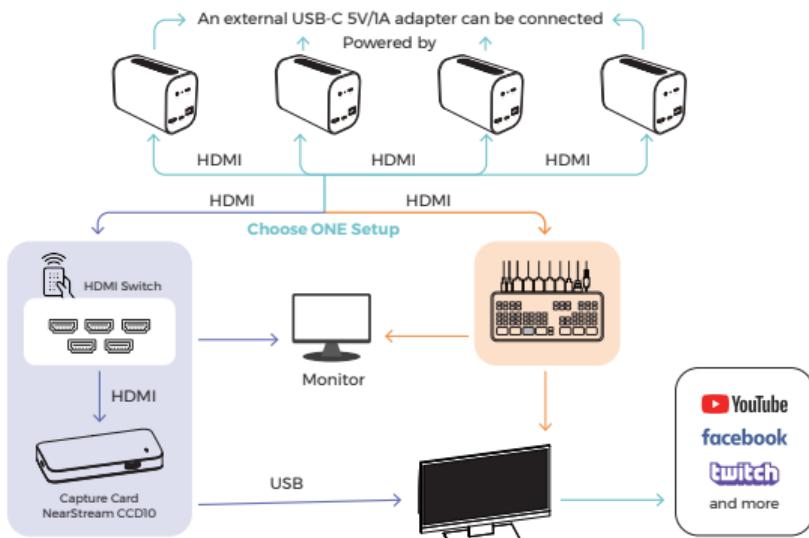
- **Workflow B (Video Switcher Solution):**

Connect the camera via HDMI directly into a **Video Switcher** (Pro-grade console).

This allows for multi-camera toggling before outputting to a monitor or PC.

- **Power Note:** For multi-camera setups, each VM20 can be powered by an external **USB-C 5V/1A adapter**.

- **Specifications:** Maximum HDMI output resolution is **1080P**. RTSP functionality is disabled while in this mode.

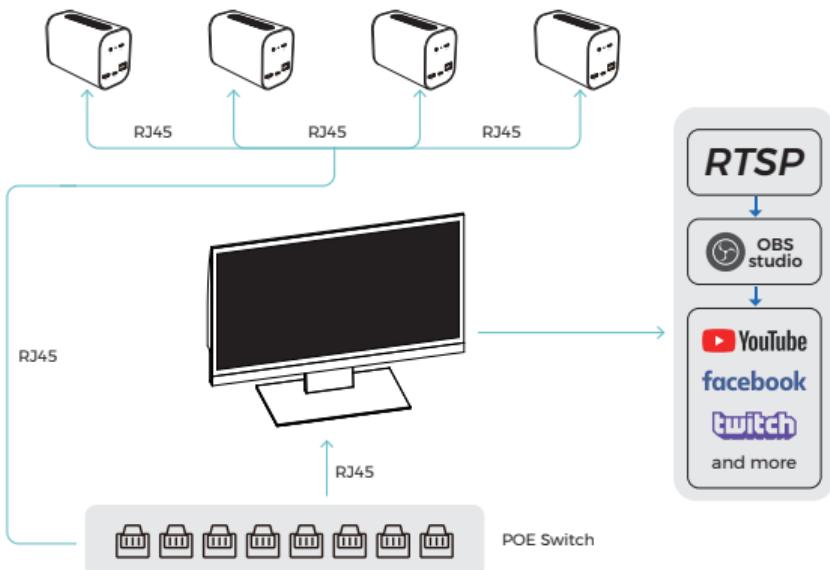


Network Mode - RTSP Streaming

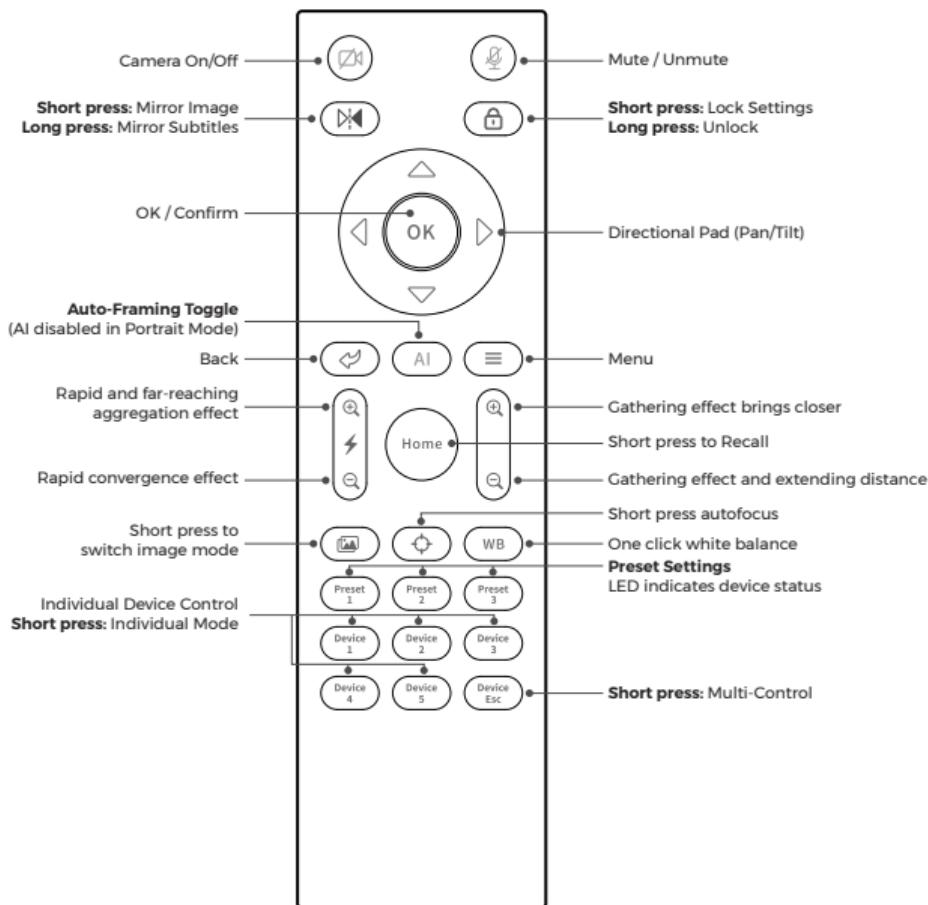


This mode is designed for experienced users familiar with network streaming and remote production.

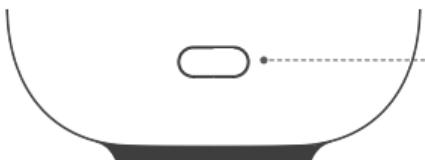
- **Hardware Connection:** Connect the VM20 camera(s) to a **POE Switch** using **RJ45 Ethernet** cables.
- **Workflow:** Camera → RJ45 → NearSync → RTSP → OBS/Streamlabs/vMix → Streaming Platform.
- **Software Configuration:** Use **NearSync** software to generate the RTSP address and manage software-based control.



Basic Controls (Remote)



Status Light Guide



Front LED Indicators

LED Color		Status / Mode
○		Solid white Power Supply: The camera is powered on and ready.
●		Solid Blue USB Streaming: Connected and streaming via USB-C.
●		Solid Green RTSP Streaming: Active streaming over the network.
●		Solid Magenta HDMI Streaming: Video outputting via HDMI port.
●		Solid Red Mute: Audio is currently muted.
●		Flashing Green Preset Position: Recalling a saved camera angle.

Network Port Indicators

LEDs Off: No network detected. Check your cable and router connection.

Orange & Green (Steady): Network connection established and active.



Quick Troubleshooting

Is the light Solid Red? The camera is not broken; it is simply muted. Press the **Mute** button on your remote or control software to restore audio.

No light on the Network Port? Ensure the Ethernet cable is fully clicked into place. If the issue persists, try a different cable or port on your switch/router.

Software & Streaming Setup

Start Your Live Stream in Minutes

Step 1 – Get Your RTSP Stream in NearSync

1. Physical Hardware Connections

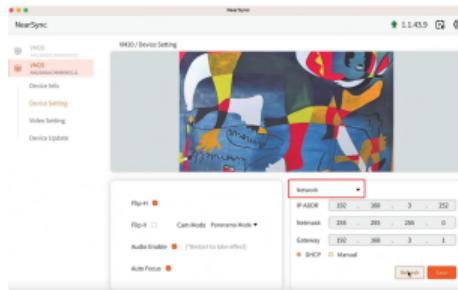
Ensure you have an **Ethernet cable (RJ45)** and the provided **USB/OTG cable** ready.

- **Network:** Connect one end of the Ethernet cable to the VM20 and the other to your **Router**.
- **PC Link:** Connect the VM20 to your **PC** using the USB/OTG cable.

2. IP Address Detection

Open the **NearSync** application on your PC to identify the camera on your network.

- In the app, click "**Refresh**" to confirm the camera's new active IP address appears in the list.



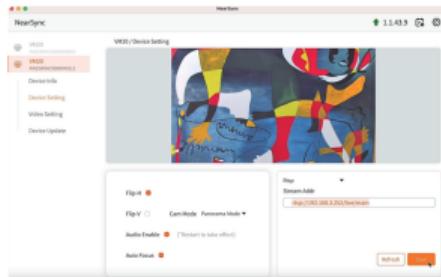
Copy URL:

Locate the **RTSP Stream URL** (it will look like: `rtsp://[IP_Address]/live/main`).

Click the **Save** button to save the URL to your clipboard.

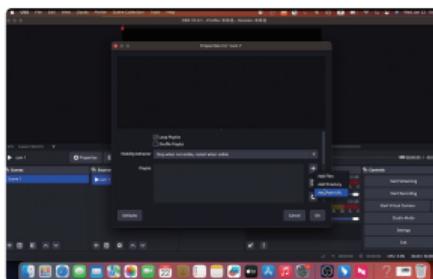
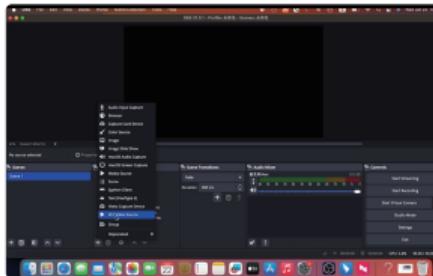
① Pro-Tip

If NearSync fails to detect the camera, ensure your PC and the camera are on the **same subnet** (e.g., both connected to the same router).

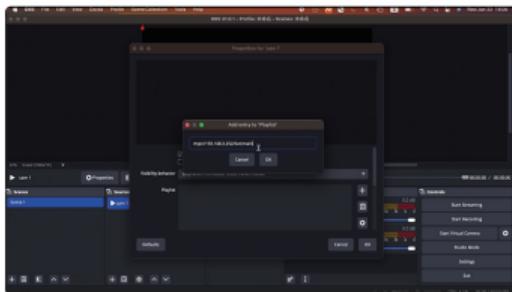


Step 2 - Add the Stream to OBS

- Open OBS
- Click + under Sources
- Select **Media Source / VLC Video Source**



- Paste the RTSP address



- Click **OK** – live video appears

Step 3 - Start Streaming

- Arrange your scenes and camera views via remote control
- Add audio source if needed
- Click **Start Streaming** in OBS

Network Streaming - Single Camera

- Connect one VM20 to your router or powered switch
- Get the RTSP stream in NearSync
- Add it to OBS and go live

Network Streaming - Multi-Camera (PoE Switch)

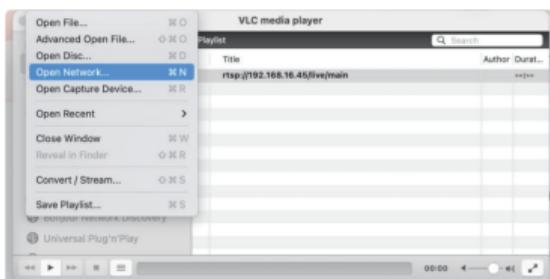
- Connect the PoE switch to your router
- Connect each VM20 to the PoE switch using Ethernet cables
- Copy each camera's RTSP stream in NearSync
- Add each stream as a separate source in OBS
- Switch between camera angles during the live stream



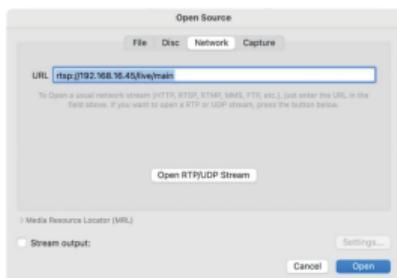
VLC Preview (Optional)

Use VLC Media Player to quickly preview your VM20 live stream.

- Open VLC
- Click **Media** → **Open Network Stream**



- Paste the RTSP address



- Click **Play** – live video appears instantly

Workflow Tips

- **RJ45 Connectivity:** The RTSP workflow typically moves from the **Camera** → **RJ45** → **NearSync** → **RTSP** → **OBS**.
- **HDMI Conflict:** Note that RTSP is not used while the camera is in HDMI mode.
- **Resolution:** When using RTSP, the video resolution depends entirely on your specific software settings rather than being fixed by the hardware.

Firmware Upgrade

Firmware Upgrade:

1. Connect the VM20 to your computer via USB-C.
2. Open **NearSync** and select "Device Update".
3. Wait for the progress bar to finish; the camera will reboot automatically.



Specifications

Product Specification	
Focusing Mode	Optical Zoom: 10x · Digital Zoom: 4x
Aperture	F 1.85-2.63
Focal Length	f 4.34~35.17mm
Resolution	Max 4k@30fps, 1920*1080P@60fps
HDMI/RTSP	1080P@30fps
Sensitivity	-38dBV/Pa 94dB SPL@1kHz
Microphone Type	8-Microphone Array, 360° spatial pointing array
Effective Pickup Distance	5-Meter radius
Power Supply Port	USB-C 5V=1A
USB Port	USB2.0 Type-C
AUX Port	Support external microphone input
HDMI Port	HDMI 2.0
RJ45 Port	Support wired network access and POE
RF 433	Support RF433 360° remote control
Compatible Operating Systems	Windows/Mac/Linux/Chrome OS
Product Dimensions	136x72x98mm
Net Weight	560g

Quick Answers & Compatibility Guide

Does every VM20 connection support 4K?

- **USB-C:** Up to 4K output
- **HDMI / Ethernet / PoE:** Up to 1080p output

Is there a mobile app for VM20?

- VM20 is controlled using the included remote
- Additional settings are available in NearSync computer software
- Mobile app is not supported

Can VM20 record to an SD card?

- **No** – VM20 does not support SD card recording

Does VM20 support NDI or camera rotation?

- NDI protocol is not supported
- The camera head is fixed (no pan or tilt)

Looking for NDI?

Consider NearStream VM33 or VM46 streaming cameras.

How do I turn off Auto Focus?

Option 1 – NearSync Software

- Open NearSync
- Go to Device Settings
- Turn off Auto Focus

Option 2 – Remote Control

- Press Menu
- Select Auto Focus
- Turn it off

What external microphones work with VM20?

- Supports 3.5mm TRS (three-pole) microphones
- Use a TRS to TRS cable

Recommended: NearStream AWM20T wireless microphone

⚠ TRRS (four-pole) connectors are not supported and may produce no audio

How do I control multiple cameras with one remote?

You can assign up to 5 VM20 cameras to one remote control.

Step 1 – Assign position

Menu → Settings → Position → Select 1-5

Step 2 – Confirm device

Short press the matching Device button

Step 3 – Switch control

Long press Device 1-5 to control that camera

To remove a camera:

Press Device Esc while pointing at the camera