

HD PTZ CAMERA

HD PTZ Camera User Manual

BR-VC20XH

This manual covers safety information, hardware setup, mechanical installation, remote-control operation, AI tracking configuration and NDI® activation for the BR-VC20XH HD PTZ camera. Read the safety precautions in Section 1 before installing or powering on the camera.



Limitation of Liability & Regulatory Notices

LIMITATION OF LIABILITY

This manual does not contain any warranties or implied warranties of any kind. The contents of this manual may be updated at any time without prior notice.

FCC NOTICE (CLASS A)

This product 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.

This product has been tested and found to comply with the limits for a Class A 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/television technician for help.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. Bronx Systems is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment.

CLASS A ITE

Class A ITE is a category of all other information technology equipment which satisfies the Class A limits but not the Class B limits. Such equipment should not be restricted in its sale, but the following warning applies: operating this equipment in a residential environment may cause radio interference.

EUROPEAN COMMUNITY COMPLIANCE STATEMENT (CLASS A)

This product is confirmed to comply with the requirements set out in the Council Directives on the Approximation of the Laws of the Member States relating to Electromagnetic Compatibility Directive 2014/30/EU.

NOTE These statements describe the tested RF/EMC performance of the camera hardware. Confirm current certification and labeling requirements with Bronx compliance before publishing or shipping.

Contents

1	Safety Precautions	04
2	Packing List	05
3	Product Connection	05
4	Video Format	06
5	About Product	06
5.1	Features	06
5.2	Interface and Switch	07
5.3	RS-232 Interface	08
5.4	Dimension	09
5.5	Installation	10
5.6	Remote Control	11
6	AI Tracking	13
6.1	Web Control	13
6.2	Remote Control	17
6.3	Target Selection	17
7	Activating the NDI® License	18
8	Troubleshooting	21

1 Safety Precautions

- During installation and use of the equipment, strictly observe all electrical safety regulations applicable in your country or region.
- Use only the power adapter supplied as standard with this product.
- Do not connect multiple devices to the same power adapter — exceeding the adapter's capacity may generate excessive heat or cause a fire.
- Do not rotate the camera head by hand; this may cause mechanical failure.
- When installing on a wall or ceiling, secure the device firmly. Make sure there are no obstacles within the rotation range of the gimbal, and do not power on until installation is fully complete.
- Keep ventilation around the device clear to avoid heat build-up.
- If the device emits smoke, an unusual smell, or abnormal noise, turn off the power immediately, unplug the power cord, and contact your dealer.
- This device is not waterproof — keep it dry at all times.
- This product has no user-serviceable parts. Damage caused by unauthorized disassembly is not covered by the warranty.

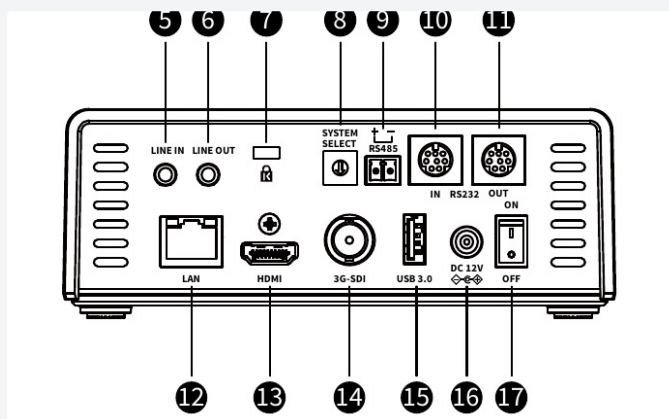
WARNING Specific electromagnetic field frequencies may affect the camera's image.

2 Packing List

Camera	1
Remote Control	1
Power Adapter	1
Power Cable	1
RS-232 Cable	1
USB Cable (Optional)	1
User Manual	1

3 Product Connection

Check that all connections are correct before powering on. The schematic diagram below is for reference only — refer to your actual installation for product connection.



BR-VC20XH REAR PANEL — REFERENCE ONLY, SEE SECTION 5.2 FOR FULL CALLOUTS

After the camera is powered on, it initializes: the gimbal moves to its limit position, then both pan and tilt return to the middle position, the motor stops, and initialization completes.

NOTE If preset 0 has been saved, the gimbal will move to preset 0 instead of the middle position after initializing.

4 Video Format

CODE	FORMAT	CODE	FORMAT
0	1080P60	8	—
1	1080P50	9	—
2	1080I60	A	1080P59.94
3	1080I50	B	1080I59.94
4	720P60	C	1080P29.97
5	720P50	D	—
6	1080P30	E	—
7	1080P25	F	720P59.94

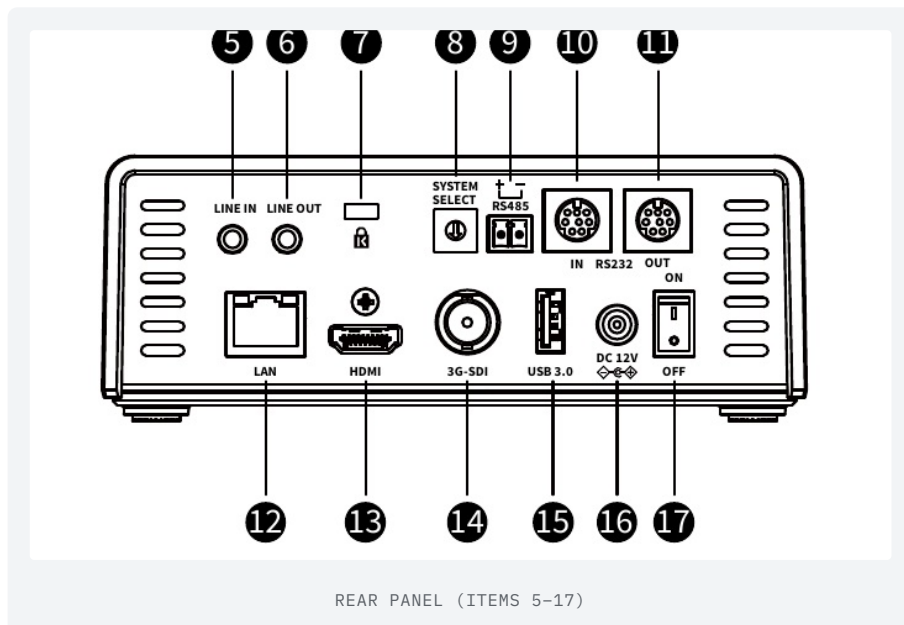
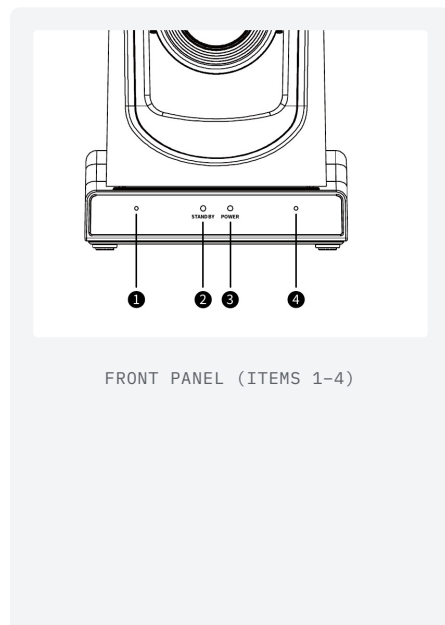
NOTE After switching the video format, you must restart the camera for the change to take effect.

5 About Product

5.1 Features

- **60.7° Wide-Angle Lens + 20× Optical Zoom** — a 60.7° high-quality ultra-wide-angle lens with up to 20× optical zoom, supporting a further 16× digital zoom.
- **1080P Full HD** — a 1/2.8-inch high-quality HD CMOS sensor with 2.07 effective megapixels delivers high-quality images at up to 1920×1080.
- **ISP Image Processing Algorithm** — refined white balance and automatic exposure significantly improve image output, suited to education recording, distance learning, video conferencing, live streaming and broadcast.
- **AI Tracking** — face-recognition-based AI accurately locates people in frame, enabling automatic tracking and automatic frame selection.
- **Leading Auto Focus Technology** — an advanced focusing algorithm delivers fast, accurate and stable focus.
- **Audio Processing Algorithm** — an exclusive audio algorithm reduces reverberation and environmental noise and supports EQ adjustment; the camera supports dual built-in mic pickup and can also connect external microphones or wireless lavaliers for most pickup scenarios.
- **Multiple Interfaces** — HDMI and SDI outputs, with SDI transmission up to 150m at 1080P30. HDMI, SDI and LAN can output three HD digital signals simultaneously.
- **Remote Control** — the camera can be controlled remotely via RS-232 and RS-485 serial ports.

5.2 Interface and Switch



NO.	NAME	NO.	NAME
1	Microphone	10	RS-232 IN Interface
2	STANDBY Indicator	11	RS-232 OUT Interface
3	POWER Indicator	12	LAN Interface
4	Microphone	13	HDMI Interface
5	LINE IN Interface	14	3G-SDI Interface
6	LINE OUT Interface	15	USB 3.0 Interface
7	Security Slot	16	DC 12V Power Interface
8	System Select Switch	17	Power Switch
9	RS-485 Interface		

5.3 RS-232 Interface

NO.	FUNCTION	NO.	FUNCTION
1	DTR	5	RXD
2	DSR	6	GND
3	TXD	7	IR OUT
4	GND	8	NC

CORRESPONDENCE BETWEEN RS-232 AND DB-9

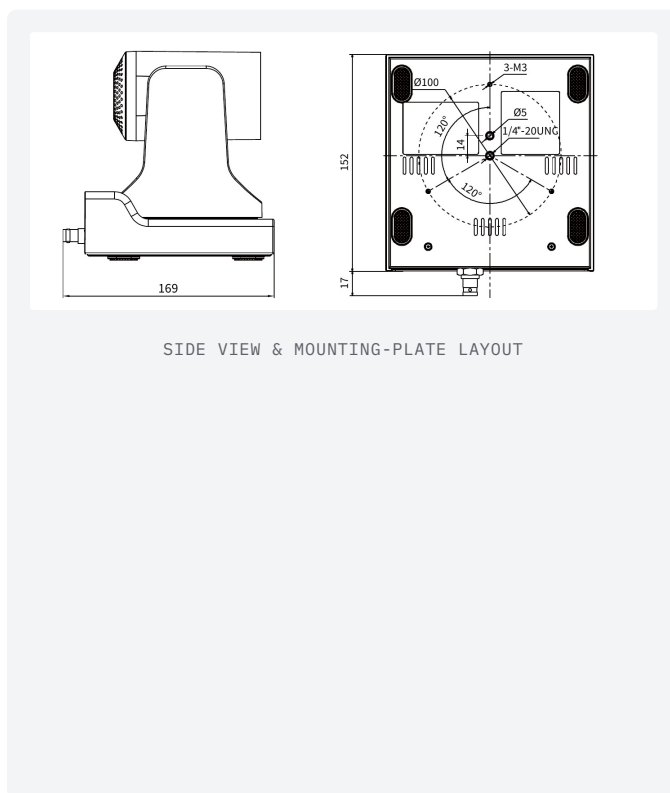
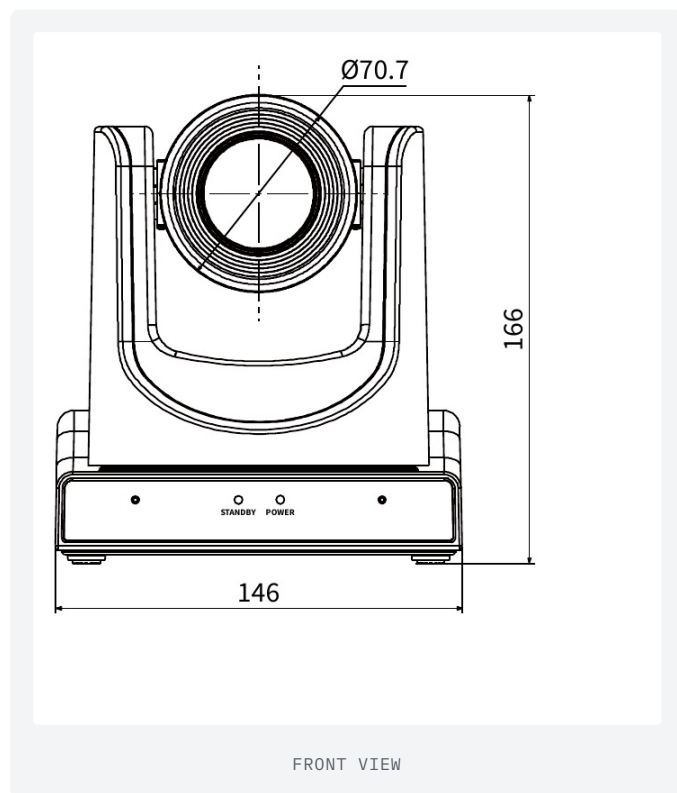
RS-232	DB-9
1. DTR	1. CD
2. DSR	2. RXD
3. TXD	3. TXD
4. GND	4. DTR
5. RXD	5. GND
6. GND	6. DSR
7. IR OUT	7. RTS
8. NC	8. CTS
—	9. RI

CORRESPONDENCE BETWEEN RS-232 AND MINI-DIN

RS-232	MINI-DIN
1. DTR	1. DTR
2. DSR	2. DSR
3. TXD	3. TXD
4. GND	4. GND
5. RXD	5. RXD
6. GND	6. GND
7. IR OUT	7. NC
8. NC	8. NC

5.4 Dimension

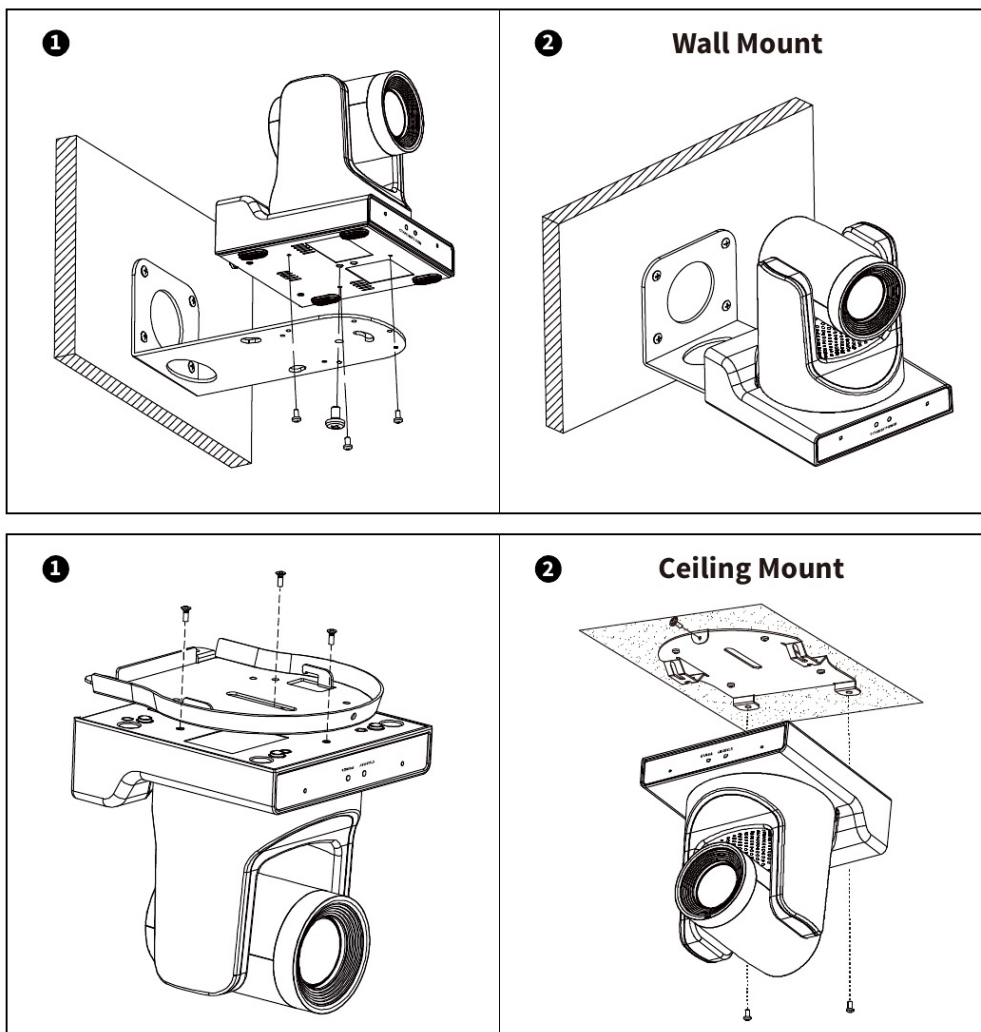
Unit: mm



5.5 Installation

The installation diagrams on the following page are for reference only — refer to the actual product and the mounting accessories supplied for your specific bracket.

NOTE Do not power on the camera until wall or ceiling installation is fully complete, and make sure no obstacles sit within the gimbal's rotation range.



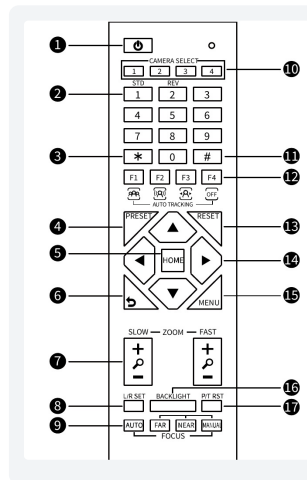
Note

The above installation diagram is for reference only, please refer to actual product for the installation accessories.

WALL MOUNT (TOP) & CEILING MOUNT (BOTTOM) – REFERENCE ONLY

NOTE The installation diagram is for reference only; please refer to the actual product for the installation accessories supplied.

5.6 Remote Control



1. Standby Key	Press to enter standby mode
2. Number Keys	Set or call a preset
3. * Key	Used in combination with other keys
4. PRESET Key	Set a preset: press [PRESET] + number key (0-9)
5. HOME Key	Confirm selection, or return the PTZ to the middle position
6. Return Key	Return to the previous menu
7. ZOOM Keys	SLOW: zoom in/out slowly · FAST: zoom in/out quickly
8. L/R SET Key	Standard: [L/R SET]+[1] · Reverse: [L/R SET]+[2]
9. FOCUS Keys	Auto / Manual / Far / Near focus

10. Camera Select	Select and control a camera: press [*]+[#]+[F1]/[F2]/[F3]/[F4] to set address 1/2/3/4. To control that camera, press 1/2/3/4 under Camera Select.
11. # Key	Used in combination with other keys
12. Auto Tracking Keys	[F1] Frame Track · [F2] Zone Track · [F3] Presenter Track · [F4] Turn Off Track
13. RESET Key	Clear a preset position: press [RESET] + number key (0–9)
14. PTZ Control Keys	Moves the PTZ in the direction of the arrow pressed
15. MENU Key	Enter the OSD menu, or return to the previous menu
16. BACKLIGHT Key	Toggles backlight compensation (auto-exposure mode only). If the subject appears dark against a bright background, press to compensate; press again to disable.
17. P/T RST Key	Runs a Pan/Tilt self-test

SHORTCUT SET

KEY COMBINATION	FUNCTION
[#] + [*] + [F4]	Enable or disable Image Freeze
[*] + [#] + [1]	Set OSD menu to default (English)
[*] + [#] + [3]	Set OSD menu to secondary language
[*] + [#] + [4]	Display the current IP address
[*] + [#] + [6]	Quickly restore factory defaults
[*] + [#] + [8]	Check the camera firmware version
[*] + [#] + [9]	Quickly set up image inversion
[*] + [#] + [MANUAL]	Restore the default IP address

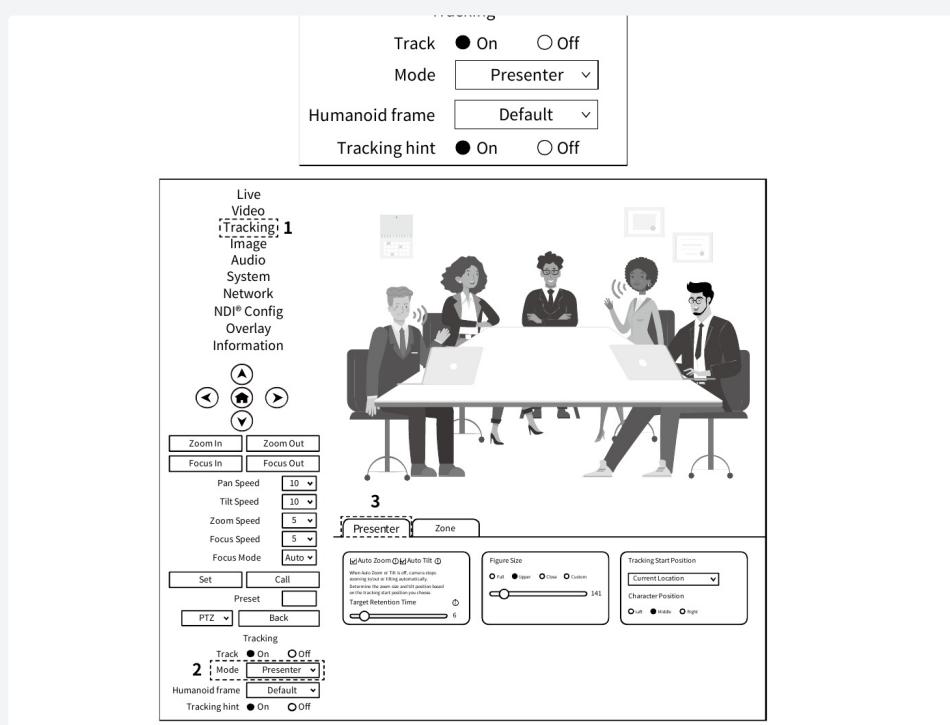
6 AI Tracking

6.1 Web Control

SPEAKER (PRESENTER) / HUMAN TRACKING

Modifying the web interface parameters changes the close-up ratio and lets you turn tracking on or off, controlling which areas and character positions are displayed. You can also choose whether to show tracking-related prompt information.

- Step 1** — Enter the camera's IP address (default 192.168.100.88) into your browser. At the login prompt, enter the username (admin) and password (admin) to access the camera's web interface.
- Step 2** — Open the **Tracking** page, select speaker mode **Presenter**, and set the tracking parameters while Track is Off. Tracking Mode is Speaker (Presenter) or Area (Zone); Presenter is the default.



WEB CONTROL — TRACKING PANEL (PRESENTER MODE)

1. **Step 3** — Set the Target Retention Time (default 6 seconds). This controls how long the lens waits at its current position, or returns to preset 1, after the tracking target is lost.

Auto Zoom	Usually left at default. When off, the lens can still move but keeps its current magnification and will not zoom.
Auto Tilt	Usually left at default. When off, the lens can only move horizontally.
Target Retention Time	Can be left at default. Sets how long the lens stays at its current position (or returns to preset 1) after the tracking target is lost. Changes take effect immediately.

2. **Step 4** — Select the desired close-up effect under **Figure Size**. This sets the proportion of the subject's body shown in the close-up frame, and changes take effect immediately.

Full	Tracks the target's entire body in the close-up frame.
Upper	Tracks the target from above the knee upward.
Close	Tracks the target from above the waist upward.
Custom	Lets you adjust the tracking target's proportion size directly. A larger proportion also increases the target's size on screen — note that fast-moving targets may be harder for the camera to keep up with.

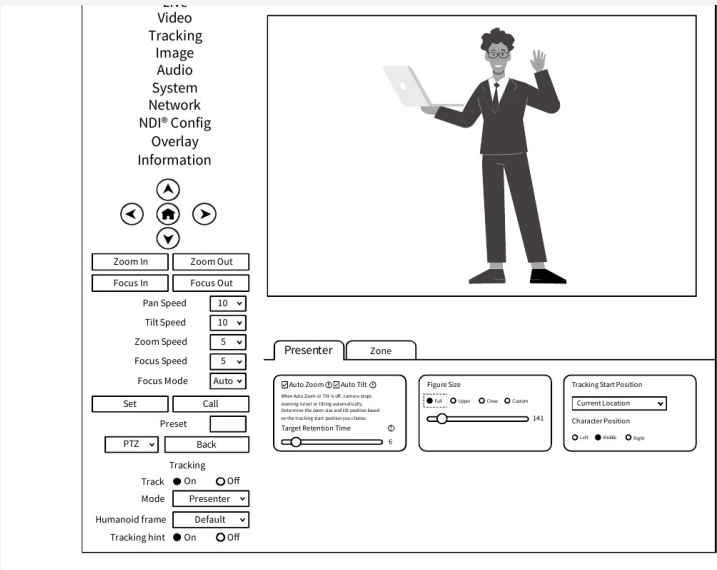


FIGURE SIZE: FULL — EXAMPLE RESULT

TRACKING START POSITION

Choose the position the lens returns to when tracking starts or stops.

Current Location	The camera's position when tracking is turned on becomes the start position; it also stops at the current position when tracking ends.
Preset 1	An additional preset position must be configured. When tracking starts, the camera first moves to Preset 1; if a target enters frame, it tracks automatically. When the target is lost beyond the timeout, the camera returns to Preset 1.

CHARACTER POSITION

Defaults to median (centre-frame). Left or right can be selected instead — this is mostly used for live-streaming scenes.

1. **Step 5** — Decide, based on the application scenario, whether to enable **Humanoid frame** and **Tracking hint**.

Humanoid frame: Debug	Turns on tracking with the humanoid box always shown on the tracking target. For debugging or demonstration only.
Humanoid frame: Off	The humanoid box is never shown when selecting a target. Suitable for live-streaming scenarios.
Humanoid frame: Default	With multiple people in frame, pressing a direction key to select a target shows the box; pressing HOME to confirm tracking hides it again and tracking begins.
Tracking hint: On	Shows a prompt in the upper-left corner of the video whenever tracking switches.
Tracking hint: Off	No prompt is shown. Also suited to live-streaming scenarios.

TIP In live-streaming scenarios, Humanoid frame and Tracking hint are often left off to avoid on-screen distractions during temporary adjustments.

AREA TRACKING (ZONE)

Divide the tracking target's frequently-active areas into up to four zones (A–D), each with its own saved preset position. When the target enters a zone, the camera automatically recalls that zone's preset to keep tracking.

1. **Step 1** — Enter the camera's IP address (192.168.100.88) in your browser and log in with username/password admin / admin.
2. **Step 2** — Open the **Tracking** page and select **Zone**. With Track off, set the tracking parameters.
3. **Step 3** — Use the web interface's directional keys and Zoom In/Out to position the lens, then save each zone (Zone A, B, C...) in turn by clicking **Save**.

NOTE The number of zones used is up to you, to a maximum of 4. Incorrect settings can be deleted or reset.

TRACKING START AREA

Select any configured zone as the tracking start or end position. When tracking starts, the camera first moves to this zone; if a target enters frame, it tracks automatically. When the target is lost, the camera returns to this zone.

6.2 Remote Control

The Auto Tracking keys on the remote control mirror the web options: **[F1]** Frame Track, **[F2]** Zone Track, **[F3]** Presenter Track, **[F4]** Turn Off Track.

6.3 Target Selection

SINGLE PERSON SCENARIO

When only one person is in the scene, enabling tracking (via web or remote control) tracks that target directly.

MULTI-PERSON SCENARIO

With multiple people in frame, you must select the tracking target manually after turning tracking on. Use the left/right keys on the remote control or web interface to select a target, then press HOME (remote or web) to confirm and begin tracking. If no target is selected, the camera automatically tracks the person closest to the centre of the image.

7 Activating the NDI® License

Before you begin, make sure you have purchased an NDI® License Key for this camera. Once purchased, email Bronx Systems your camera's MAC address and device serial number to receive your license details. Follow the steps below to find this information and activate the NDI® license.

1. **Step 1 — Establish a wired network connection.**

1. Power the camera using the supplied power cable and adapter.
2. Connect the camera to an external display via HDMI (display only — do not connect the HDMI output to a computer). Alternatively, connect the camera to your computer using the supplied USB cable.
3. Connect the camera to a router using an Ethernet cable.

2. **Step 2 — Access the camera via its IP address.** Enter the default IP address (192.168.100.88) into your web browser, then sign in with username and password admin / admin.

http://192.168.100.88

Sign in to access this site

Authorization required by http://192.168.100.88
Your connection to this site is not secure

Username

Password

Sign in

Cancel

1. **Step 3 — Send your MAC address and device serial number to Bronx Systems.** After logging in, open the **NDI® Config** page to find the **NDI® Machine ID**. Copy it and send it to Bronx Systems to receive your NDI® License File.

1. **Step 4 — Activate the license.** After receiving your NDI® License File from Bronx Systems, open the NDI® Config page again, select the license file, and click **Upload Files**. Click **OK** in the confirmation dialog. Activation completes after the camera restarts.

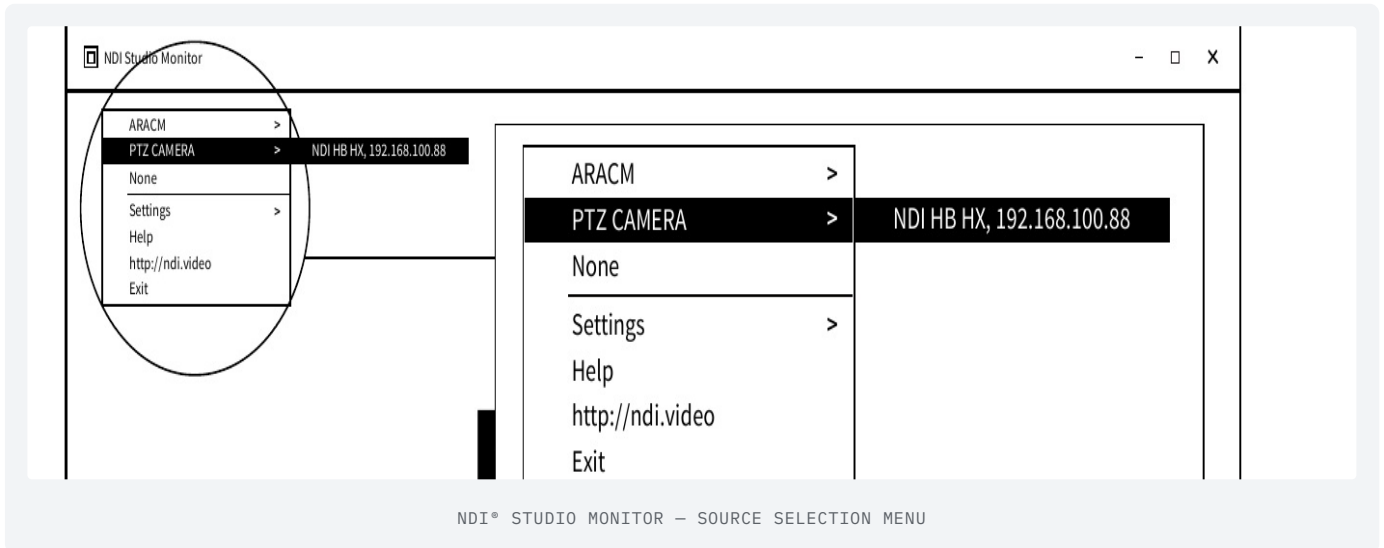
Enable NDI®	On / Off
NDI® Machine ID	Unique identifier for this camera — copy and send when requesting a license
NDI® License File	Select the license file supplied by Bronx Systems, then click Upload Files
NDI® License	Shows licence status (e.g. trial or activated)
NDI® Firmware Version	Current NDI® firmware build on the camera

NOTE Full NDI® is an optional, licensed feature. A trial period is available each time the camera is powered on; continued use after the trial requires an activated license file as described above.

1. **Step 5 — Download and install NDI® Tools.** NDI® Tools (including NDI® Scan Converter and NDI® Studio Monitor) are available from the official NDI® website.
 1. Go to <https://ndi.video/tools/ndi-core-suite/>.
 2. Under Download NDI® Tools, choose the correct build for your operating system (Windows or macOS).
 3. Finish installing NDI® Tools on your computer.

1. Step 6 — Connect NDI® sources.

1. Ensure the camera is on the same local network as your computer.
2. Use NDI® Scan Converter to convert the camera's signal into an NDI® stream.
3. Launch NDI® Studio Monitor and select your video input.
4. Click the menu icon and select the camera's NDI® source to view its real-time video signal.



If you use streaming software such as OBS Studio or vMix, refer to that platform's own documentation for connecting an NDI® source.

8 Troubleshooting

IMAGE

Monitor shows no image	1) Confirm the power supply is connected, voltage is normal, and the power indicator is lit. 2) Power-cycle and confirm the camera completes self-test. 3) Confirm the video cable to your display/platform is correctly connected.
Image jitters after connection	1) Confirm the camera is mounted in a stable position. 2) Check for vibrating machinery or objects near the camera.
No video image in browser	Internet Explorer and IE-core browsers are not supported. Use Google Chrome, Firefox or Edge for normal video display.
Unable to access camera via browser	1) Confirm your PC's network access works correctly and can ping the camera. 2) Disconnect from the network and connect the PC directly to the camera, resetting the PC's IP address if needed. 3) Confirm IP address, subnet mask and gateway are correct. 4) Check for a MAC address conflict. 5) Confirm the web port hasn't been changed from its default (80).
Forgotten IP address or login	Default IP address: 192.168.100.88 · Default username: admin · Default password: admin

CONTROL

Remote control not working	1) Check and replace the batteries. 2) Confirm the camera is in the correct working mode. 3) Confirm the remote's address key matches the camera.
Serial port cannot control camera	1) Confirm protocol, address and baud rate match on both ends. 2) Confirm the control cable is properly connected.

