nearus

Nearus USB2.0 Camera Manual

NU-350-USB2PTZ-B

Safety Tips

Please read this manual carefully before installing the camera.

Keep the camera away from violent vibration, physical stress, moisture, extreme temperatures, and excess lighting.

Install the camera in a safe location where it is unlikely to be damaged.

Use the specified voltage only. Excessive voltage can result in fire or electric shock.

Keep the camera away from strong electromagnetic interference.

Do not view bright images (halogen lights, the sun, etc.) for long periods.

Do not clean the camera with active chemicals or corrosive agents. Remove dust or dirt from the lens with a blower, or use an eyeglass cleaner with a clean microfiber cloth.

Do not disassemble the camera. In case of trouble, contact tech support.

Box Contents

- 1080p color video conference camera
- 12V/2.0A DC power adapter
- Installation bracket
- 1/4″-20 threaded adapter
- USB 2.0 cable, 3 inches
- 9-pin DIN to screw terminal cable
- 9-pin DIN to DB9 serial cable (for RS-232 and 485)
- Four long screws
- Two short screws
- IR remote
- Two batteries for remote

Installation

Best Practices

For conference rooms where the audience sits around a table, install the camera below the display, at eye level for the seated participants. For larger training rooms or class-rooms, mount it above or beside the display.

Typical mounting height for conference rooms is 30–65 inches above floor level.

Proper lighting is crucial for image quality. Avoid backlighting (especially from outside windows) and supply proper foreground lighting.

Have the electrical or general contractor install a double gang junction box at the desired camera height.

Wall Mount Installation

Install a double gang junction box at the desired location.

Pull the necessary wires (USB 2.0 extender, control wires, and power wires) to the junction box.

Thread the field wires through the L-bracket's wire access hole and secure the L-bracket to the junction box using the 4 long screws.

Mount the camera to the L-bracket by inserting the 2 short screws from the underside of the bracket.

Connect the USB 2.0 cable, power connection, and control wire to the back of the camera.

Connect USB 2.0 cable to the PC and select the 'Nearus Camera' as the video device in the software.

Dual-gang mounting holes

Camera mounting holes

Wire access hole
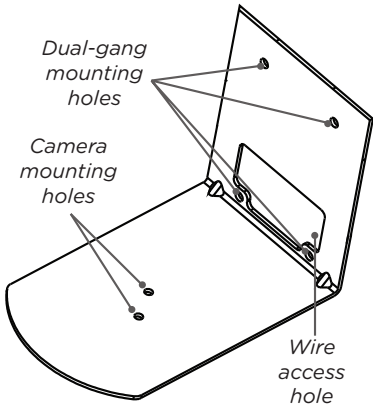
Tripod/Ceiling Mount Installation

The included threaded adapter was designed to attach the base of the camera to a standard 1/4"-20 UNC threaded rod, or to a standard camera mount such as a tripod.

Attach the threaded adapter to the camera using the two small screws, then attach this assembly to the threaded rod or a camera mount.

Align

Align
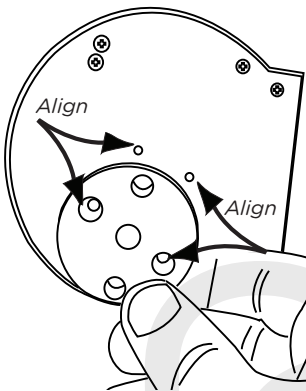
Setting Presets

To set up preset positions, press the preset number then press the desired action.

To Set: Adjust the camera to the desired view. Press the preset number, then *Set*.

**To Call:** Press the preset number, then *Call*.

To Clear: Press the preset number, then *Clear*.

Optional Software Install

The camera is suitable for use with all major videoconferencing software. It supports most features of those systems and provides far-end PTZ control.

If you need software, the Nearus Camera Control Software is available on the Support tab of the product page.

To install and use this software, connect your local laptop to the camera with USB 2.0 cable & a VISCA-to-RS-232 adapter.
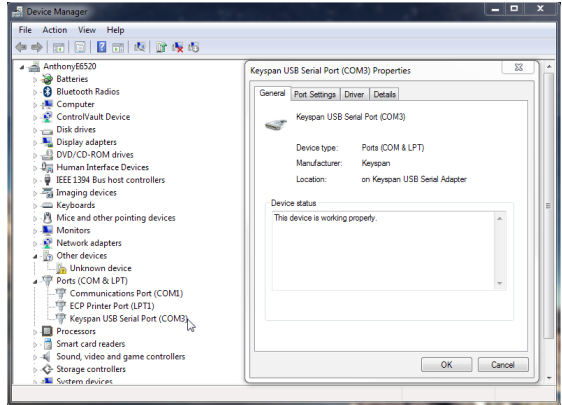
Confirm the camera's COM port by going to **Control Panel > Device Manager > Ports** (or push the Windows key + Pause/Break). Expand the Ports tree, and locate the camera's port number at the end of the line item, or right click the Port, and click Properties and locate the port number.

Download the Nearus Camera Control Software, and follow the basic installation steps.

Once the install is complete, match the COM port on the top right of the software interface to the COM port established in Device Manager.

Your installation is now complete!

Basic Functionality

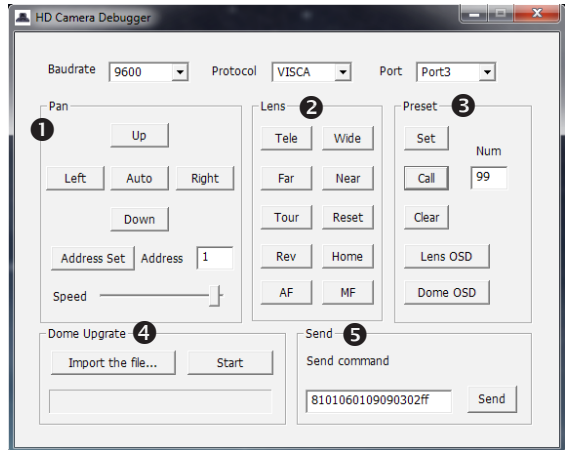Features not described here are intended for future capabilities.

Pan Area ❶

Pan and tilt the camera using the directional buttons.

Adjust the speed of the camera's movement by setting the slider to the desired speed.

Lens Area ❷

To zoom in, press Tele. To zoom out, press Wide.

To adjust the focus, press Far or Near.

Preset Area ❸

Point the camera toward the desired viewing area, type in a number in the "Num" field, and press "Set".

Enter a number in the "Num" field and press "Call" to shift the camera to the saved viewing parameters.

Enter a number in the "Num" field and press "Clear" to remove that preset.

Firmware Update Area ❹

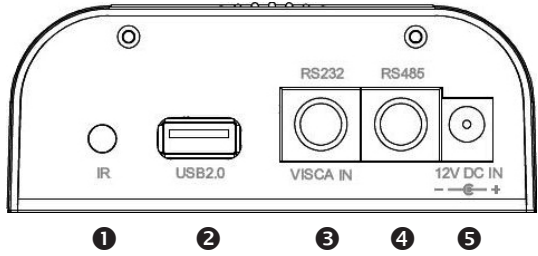Click "Import the file…" to locate the new firmware, and "Start" to begin the update.

Command Area ❺

Input the VISCA/HEX command for the command in the text box, then click "Send" to make the camera execute the command.

Hardware Anatomy

Camera Anatomy

- ❶ IR receiver
- ❷ USB 2.0 input
- ❸ VISCA, RS-232C, RS-485 input
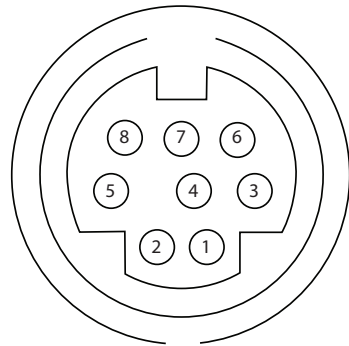- ❹ RS-485 output
- ❺ DC12V 2A power input socket

VISCA to RS-232C IN Connector Anatomy

To control the camera via RS-232 or RS-485, match the controlling pins to the pins on the provided VISCA cable.

RS-232 IN Pinout Chart

Use VISCA protocol.

Pin #	Function
1	DTR In
2	DSR In
3	TXD In
4	GND
5	RXD In
6	GND
7	IR Commander Signal Output
8	N/A

RS-485 OUT Pinout Chart

Use PELCO-D protocol.

Pin #	Function
1	Data Transmission Ready Out
2	Data Set Ready Out
3	Transmit Data Out
4	Ground
5	Receive Data In
6	Ground
7	RS-485 -
8	RS-485 +

Remote Control Functions

Remote Control Functions

Reset	Restarts the camera with the default factory settings.
Power	Turns the camera on or off.
Camera Select	Chooses which camera IR range the remote functions on.
Presets Keypad Set	Press "Set" to define a preset position.
Presets Keypad Call	Enter a preset number and press "Call" to move the camera
Presets Keypad Clear	Enter a preset number and press "Clear" to delete a preset
Zoom Fast (+)	Fast "Zoom-In" function.
Zoom Fast (–)	Fast "Zoom-Out" function.
Zoom Slow (+)	Slow "Zoom-In" function.
Zoom Slow (–)	Slow "Zoom-Out" function
Auto	Auto-focuses the image
Manual	Enables manual focus
Far	Zooms far
Near	Zooms near
Directional Pad	Up, Down, Left, Right
Pan	Begins panning
L-Limit	Sets the left limit point for boundary scans
Scan	Enables/disables automatic scanning
R-Limit	Sets the right limit point for boundary scans
Home	Returns the camera to its home position
Tour	Enables touring
Rev	Inverts the image
Freeze	Not Supported
BL	Backlight compensation
WB	White balance
AE	Auto exposure
DZOOM	Not Supported
HDMI	Switches video to HDMI (not applicable)
DVI	Switches video to DVI (not applicable)
Format	Working switch 1080p@30, 1080p@25

Common Hex Commands

Power On	81 01 04 00 02 FF	Preset 1 Set	81 01 04 3F 01 01 FF
Power Off	81 01 04 00 03 FF	Preset 1 Call	81 01 04 3F 02 01 FF
Pan Up (slow)	81 01 06 01 03 03 03 01 FF	Preset 2 Set	81 01 04 3F 01 02 FF
Pan Up (fast)	81 01 06 01 09 09 03 01 FF	Preset 2 Call	81 01 04 3F 02 02 FF
Pan Down (slow)	81 01 06 01 03 03 03 02 FF	Preset 3 Set	81 01 04 3F 01 03 FF
Pan Down (fast)	81 01 06 01 09 09 03 02 FF	Preset 3 Call	81 01 04 3F 02 03 FF
Pan Left (slow)	81 01 06 01 03 03 01 03 FF	Preset 4 Set	81 01 04 3F 01 04 FF
Pan Left (fast)	81 01 09 01 09 09 01 03 FF	Preset 4 Call	81 01 04 3F 02 04 FF
Pan Right (slow)	81 01 06 01 03 03 02 03 FF	Preset 5 Set	81 01 04 3F 01 05 FF
Pan Right (fast)	81 01 06 01 09 09 02 03 FF	Preset 5 Call	81 01 04 3F 02 05 FF
Pan Stop	81 01 06 01 09 09 03 03 FF	Zoom In (Tele)	81 01 04 07 02 FF
Zoom Stop	81 01 04 07 00 FF	Zoom Out (Wide)	81 01 04 07 03 FF

Presets

Preset	Function
76	Places the camera into standby status
77	Displays the self-test menu on the screen
92	Sets the left limit of scanning
93	Sets the right limit of scanning
94	Returns the camera to factory defaults and restarts it
96	Returns the camera to the home position
97	Activates regional pan scanning
98	Activates tour scanning
99	Activates 350° horizontal scanning

Troubleshooting

The computer does not recognize the camera:

- **Possibility 1:** The UVC driver did not load properly. Unplug the camera, restart the computer and let it boot up fully, then plug camera back into the computer and wait for drivers to load.

- **Possibility 2:** No UVC driver was available for download. Go to Device Manager, right-click the camera under "Other Devices", and select uninstall. Right-click again, and select "Scan for Hardware Changes" to reload the driver.

The remote isn't working:

- The "Camera Select" setting on the remote does not match the "IR Select" switch number on the DIP switches on the bottom of the camera. Choose the correct "Camera Select" button on the remote and try again.

The image fragments on iOS:

- When using Quicktime, set video quality to maximum.

The image is upside down or reversed:

- **Possibility 1:** The Reverse button has been pressed. Press "Rev" on the remote.

- **Possibility 2:** The computer's software is causing the problem. Adjust the camera image in the software. Note that some software displays the image reversed in the near side but shows it properly on the far side.

The camera doesn't respond to VISCA commands when connected directly to a PC.

- **Possibility 1:** The connection is loose. Ensure the connection is secure. If that does not solve the issue, try another cable.

- **Possibility 2:** The device ID in the control code is not set properly. Most commands should use "81" as the first hex value for a camera with the default ID of 1. *Example: The hex command for Power On is: 81 01 04 00 02 FF*

Specifications

Image Sensor	1/2.9" Color CMOS, 2.1 Megapixels
Minimum Scene Illumination	0.1 Lux at f1.6
White Balance	Auto/indoor/outdoor/ATW/Manual
Gain Control	Auto
Backlight Compensation	ON/OFF
Focus	4.7–47mm
Iris	F1.6-F2.5
Zoom	10 X Optical Zoom
Video Output	USB 2.0, MJPEG
Video Format	1080p @ 30Hz
IR Control	Front & Rear Sensors
Communication	EIA/RS-232, EIA/RS-485, (both bidirectional)
PTZ Control Protocol	PELCO-D, VISCA, UVC 1.5
Baud	9600 / 38400 bps
Presets	64
Save Status after Power Off	Yes
Pan Speed	1-40°/s
Tilt Speed	1-40°/s
Pan Rotation Angle	350°
Tilt Rotation Angle	+90°, -30°
HOV	54°
Auto Pan Scan	Yes
Remote Control	IR Wireless Remote Control PTZ
Power	12VDC ±10% 2A
Operation Temperature	32–122° F
Environmental Humidity	0–95% (non-condensing)
Camera Dimensions	4.88"w x 5.71"h x 4.72"d
Net Weight	1.61 lb.

Support

Need Help? Contact Tech Support!

If you need further clarification, please email support@SnapAV.com. For more information, instructional videos, support documentation, or ideas, visit our website and view your item's product page.

1-Year Limited Warranty

This Nearus™ product has a 1-Year Limited Warranty. This warranty includes parts and labor repairs on all components found to be defective in material or workmanship under normal conditions of use. This warranty shall not apply to products that have been abused, modified or disassembled. Products to be repaired under this warranty must be returned to a designated service center with an assigned return authorization (RA) number. Contact technical support for an RA number.

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