

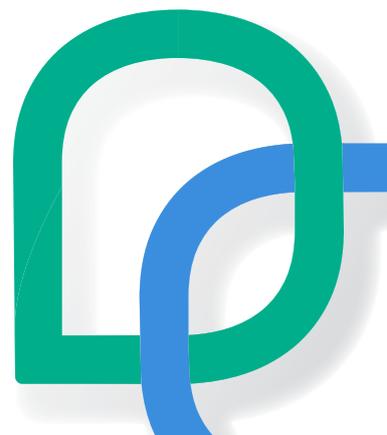
 nearus



Nearus USB2.0 Camera Manual

NU-100-USB2PT-B

NU-300-USB2PTZ-B



Introduction

This Nearus Video Conference Camera is equipped with HD color, smooth panning, tilting, and *zooming. In this manual, you will learn how to mount, wire, and control the camera to your system. Please read all instructions before installing.

*Zoom function only available on NU-300-USB2-PTZ-B.

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Safety Tips

- Please read this manual carefully before installing the camera.
- To avoid damage, keep the camera away from violent vibration, physical stress, moisture, or excessive temperatures/lighting.
- Install the camera in a safe place where it cannot be damaged.
- Use the specified voltage only. Excessive voltage may result in fire or electric shock.
- Keep the transmission of RS-485 and video signal away from powerful electromagnetic radiation sources.
- Avoid images that are extremely bright (e.g., light sources, the sun, etc.) for long periods of time.
- Do not clean the camera with active chemicals or corrosive agents. Remove dust or dirt on the surface of the lens with a blower (Commercially available), or eyeglass cleaner with a clean, microfiber cloth.
- Do not disassemble the camera. In case of abnormal operation, contact Tech Support.

Supplied Accessories

- HD Color Video Conference Camera (1)
- 12V/2.0A DC power adapter (1)
- USB 2.0 cable (3 in.) (1)
- Installation bracket & screw (1)
- 9-pin DIN to screw terminal adapter
- 9-pin DIN to DB9 serial adapter
- IR remote (1)
- Product Quick Start Guide (1)

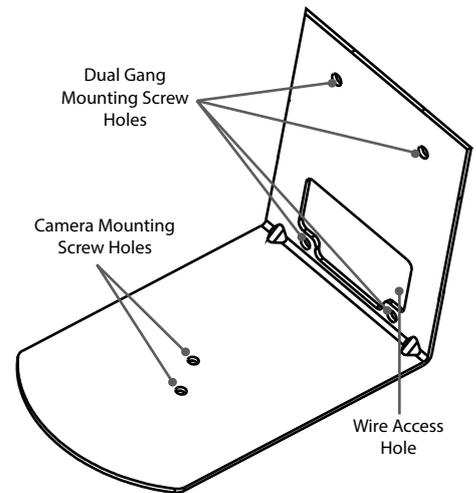
Installation

Best Practices:

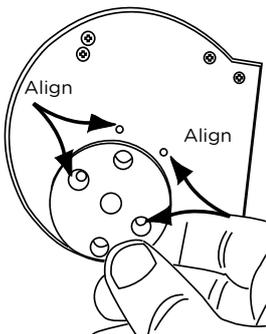
- For conference rooms where the audience will be seated around a table, install the camera below the display, near eye-level for seated participants. For larger training rooms or classrooms, mounting above or beside the display may be preferred.
- Typical mounting height for a conference room camera is between 30 and 65 inches AFF.
- Proper lighting is critical for image quality. Backlighting from outside windows should be avoided and proper foreground lighting is highly recommended.
- It is recommended to have the electrical or general contractor install a double gang junction box at the desired camera height during the project's construction.

Wall Mount Installation

1. Install a double gang junction box in the wall at the desired location.
2. Pull the necessary field wires (USB 2.0 extender, control wires, and power wires) to the double gang j-box.
3. Thread the field wires through the L-bracket's wire access hole and secure the L-bracket to the j-box using the 4 provided screws.
4. Mount the camera to the L-bracket using the 2 short screws from the underside of the camera and bracket.
5. Connect the USB 2.0 cable, power connection, and control wire to the back of the camera.
6. Connect USB 2.0 cable to the PC and select the 'Nearus Camera' as the video device in the software.



Tripod/Ceiling Mount Installation



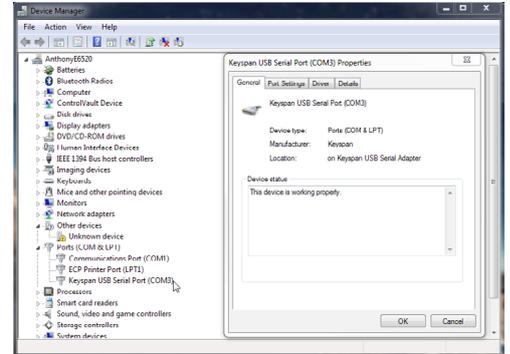
The included threaded adapter was designed to attach the base of the camera to a standard 1/4-20 UNC threaded rod or a standard camera mount - such as a tripod.

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

Optional Camera Software Install

If you are not using software of your own, you may use the optional software available on the product page, located under the Support tab, labeled “Nearus Camera Control Software”.

1. Connect your local laptop via USB 2.0 Cable & a VISCA to RS-232 adapter.
2. Confirm the 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.
3. Next, download the Nearus Camera Control Software, and begin setup. Follow the basic installation steps to include your name, company name, and desired application location.
4. Once the install is complete, match the COM port on the top right of the HD Camera Debugger software to the COM port established in Device Manager.
5. Now you are ready to control the camera!



Basic Functionality

Now that the camera is set up with the HD Camera Debugger software, you may test some of the basic features.

1. Pan and tilt the camera using the directional buttons.



2. Adjust the speed of the camera’s movement by sliding the tab to the desired speed.



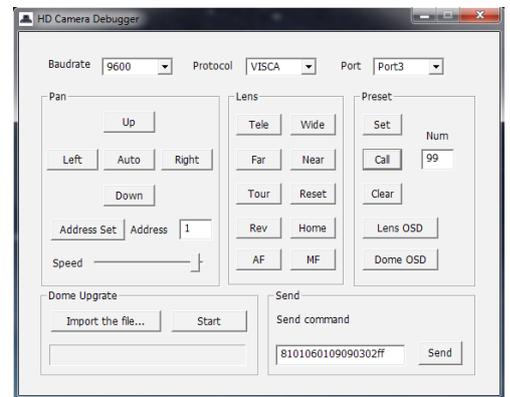
3. To *Zoom in or out, press Tele (In) or Wide (Out).



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



5. Press “Call” with the previously entered number in the “Num” field, and the camera will return to the original viewing area.



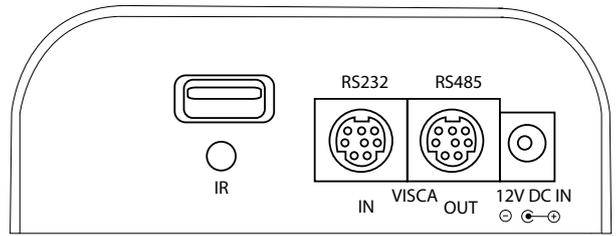
Note: Some features within the HD Camera Debugger software are designed for future use.

*Zoom feature NU-300-USB2PTZ-B only

Hardware Anatomy

Camera Anatomy

1. **USB 2.0 input**
2. **IR Receiver of R/C Signal**
To receive IR remote controller signal Sensor
3. **VISCA RS232C IN Connector**
When connecting multiple cameras to a PC via RS-232C (VISCA IN), use the serial cable connect VISCA OUT of the first camera to the VISCA IN of the second camera.
4. **VISCA Out/RS-485 Control Interface**
Used for daisy-chaining cameras, or RS485 Control.
5. **DC12V 1.2A Power supply socket**

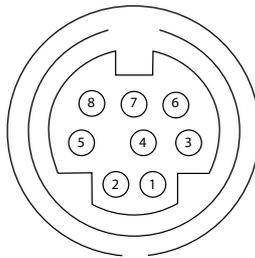


VISCA to RS-232C IN Connector Anatomy

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

Pin S/N	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
Baudrate	9600 (default)
Protocol	VISCA



RS-485 OUT Pinout Chart

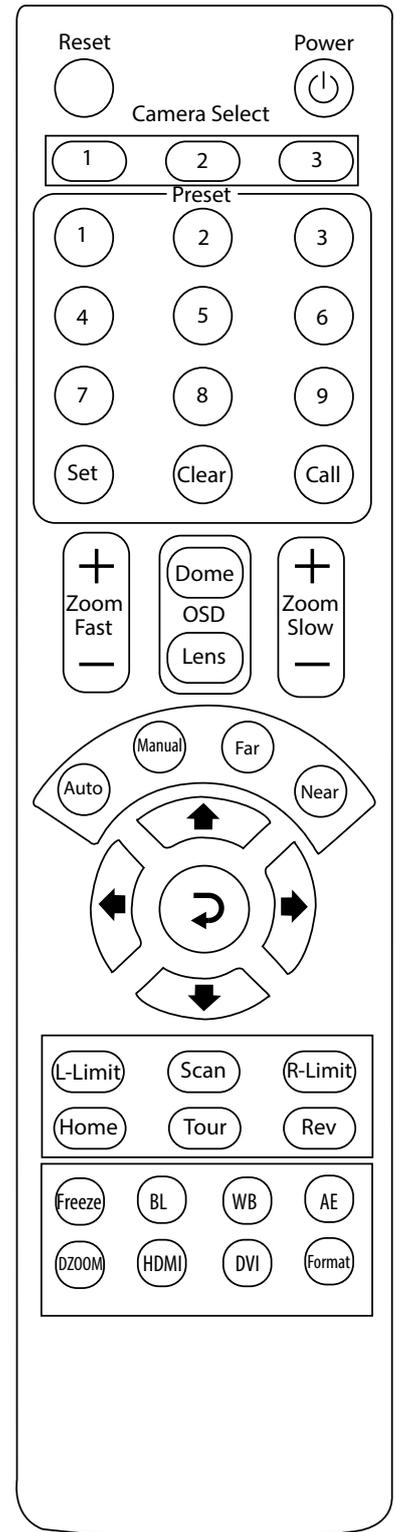
Pin S/N	Function
1	Data Transmission Ready Out
2	Data Set Ready Out
3	Transmit Data Out
4	Ground
5	Receive Data In
6	Ground
7	RS-485 -
8	RS-485 +
Baudrate	38400 (default)
Protocol	PELCO-D

Most 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 Recall	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 Recall	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 Recall	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 Recall	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 Recall	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

Remote Anatomy

Button(s)	Function
Reset	Restarts Camera and reverts back to default Factory settings.
Power	Turns the camera On/Off.
Camera Select	Chooses which camera IR range the remote functions on.
Presets Keypad (Set)	Press "Set" to define a preset position.
Presets Keypad (Set)	Press "Set" to define a preset position.
Presets Key-pad (Call)	Press "Call" then the associated preset to have the camera.
Presets Key-pad Clear	Press "Clear" to clear a preset position.
Zoom Fast (+)	Fast "Zoom-In" function (B-300-USB3-PTZ-B only).
Zoom Fast (-)	Fast "Zoom-Out" function (B-300-USB3-PTZ-B only).
Zoom Slow (+)	Slow "Zoom-In" function (B-300-USB3-PTZ-B only)
Zoom Slow (-)	Slow "Zoom-Out" function (B-300-USB3-PTZ-B only)
Auto	Auto Focuses the image
Manual	Enables manual focus
Far	Auto-zooms far
Near	Aut-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	Freezes the image
BL	Backlight Compensation
WB	White Balance
AE	Auto Exposure
DZOOM	Digital Zoom
HDMI	Switches video to HDMI (not applicable)
DVI	Switches video to DVI (not applicable)
Format	Switches video formats (not applicable)



Basic Functionality

To SET a preset, point the camera in the desired direction, press the number to be associated with that position, followed by "Set".

To CALL a preset position, press the number associated with the desired position, followed by "Call".

To CLEAR a preset, press the number associated with the desired position to be erased, followed by "Clear".

To ZOOM IN quickly, press "Zoom Fast (+)".

To ZOOM OUT quickly, press "Zoom Fast (-)".

Presets

Preset Position No.	Functions
76	Enables stand-by status
77	Displays Self-test menu on screen
92	Set Left limit position of scanning
93	Set right limit position of scanning
94	Restart Camera and return default settings
96	Home position
97	Enable regional Pan scanning
98	Enable Tour scanning
99	Enable 360 degree Horizontal scanning

Troubleshooting

Problem	Possible Reason	Solution
Camera Not Recognized by Computer	UVC Driver did not load properly	Unplug camera, restart computer with camera unplugged, wait for computer to boot up fully, plug camera into computer with USB cable and wait for drivers to load.
		The UVC driver is native to Windows OS, no driver is available for download. To troubleshoot, go to Device Manager, locate the camera under "Other Devices", right-click, and select uninstall. Right click again, and select "Scan for Hardware Changes" to reload the driver.
Image Fragments on a Macintosh computer.	UVC Driver may have an incompatibility.	When used with Quicktime, set video quality to Maximum.
The image is upside down or reversed.	The Reverse button has been pressed.	Press "Rev" on the remote.
	The computer's software is causing the problem.	Adjust the camera image in the software. Note: some software's display reversed in the near side but will be shown properly on the far side.
The remote isn't working.	The "Camera Select" setting on the remote does not match the "IR Select" switch number on dipswitches located on the bottom of the camera.	Choose the correct "Camera Select" button on the remote and try again.
The camera is not responding to VISCA commands when connected directly to a PC.	The connection between the PC and the camera has been disconnected.	Make sure the connection is secure. Worst case, try with another cable and a local PC.
	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: HEX Command for Power ON is: '81 01 04 00 02 FF'

Specifications

		NU-100-USB2PT-B	NU-300-USB2PTZ-B
Image	Sensor	1/2.7" Color CMOS, 2.1 Megapixels	1/3" Color CMOS, 1.3 Megapixels
	Minimum Scene illumination	5.0 Lux @ F2.0	0.1 Lux@F1.2
	White Balance	N/A	AUTO
	Gain Control	AUTO	
	Back-light Compensation	N/A	Manual
Lens	Focus	4mm	4.9-49mm Auto Focus
	Iris	N/A	AUTO
	Zoom	N/A	10 X Optical ZOOM
Video Output	USB 2.0, MJPEG		
Video Format	1080p @30Hz, 720p @ 30Hz	720p @ 30Hz	
IR Control	Front & Rear Sensors		
Communication	EIA/RS-232 (Bidirectional), EIA/RS485		
PTZ Control Protocol	VISCA, PELCO-D		
Baud Rate	9600 / 38400 bps		
Preset	64		
Save status after Power off	Yes		
Pan Speed	1-120°/s		
Tilt Speed	1-100°/s		
Pan Rotation Angle	360° Continuous		
Tilt Rotation Angle	+90°, -45°		
Auto Pan Scan	Yes		
Remote Control	IR Wireless remote control P/T	IR Wireless remote control P/T/Z	
Power	DC12V ±10% 2A		
Operation Temperature	32-122° F		
Environmental humidity	0-95%RH (non-condensation)		
Camera Dimensions	4.88" W x 5.71"H x 4.72"D / 8.66"W x 8.66"H x 6.89" D		
Weight	1.41 lbs/4.0 lbs (Camera/Net)	1.61 lbs/4.12 lbs (Camera/Net)	



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