Choo Choo Vision

CAB-CAM 6

PAN-CAM User Manual

Contents

Introduction

Congratulations! You have purchased a unique technological advancement for Model Railroading that immerses you into the world of your layout.   The PAN-CAM accessory allows you to rotate the view of your CCV Camera. It easily attaches to CCV Trackside and CAB-CAMs

Pre-Requisites:

The Choo Choo Vision PAN-CAM accessory can be used with a CAB-CAM or a Trackside Camera that has the following features:

- The camera must have a 3" lens installed.
- The camera must have the larger 400mAh battery installed or be powered externally (via our DCC Convertor or USB 5V Power). The larger power source is required due to the current draw of the PAN-CAM servo.

Using your Choo Choo Vision Camera:

Menus:

The Choo Choo Vision cameras is controlled by two menu screens, the Main User Screen, and an Admin Screen.

The Choo Choo Vision Admin screen allows you to manage camera settings and control what types of controls are displayed on the User Screen.

The Choo Choo Vision Main User Screen is the primary screen for viewing video and controlling the camera.

The following sections detail how to access and utilize the Admin Screen and the Main User Screen:

Choo Choo Vision Admin Screen   **Choo Choo Vision Main User Screen**

Admin Screen

The Choo Choo Vision Admin screen allows you to manage camera settings and control what types of controls are displayed on the Main User Screen.

Accessing the Choo Choo Vision Admin Screen

To access the Admin Screen:

- Turn the camera ON
- Open a web browser on a computer or mobile phone. Note: The computer or mobile phone must be on the same WiFi network as the camera.
- Locate the camera's ID number (printed on the back of the camera).
- Enter the camera's URL into your web browser The proper format is http://ChooChooVisionxxxx:xxxx/admin where xxxx is your camera ID.   *Notice the colon ":" between the ID numbers.*
- For example, if your camera ID is 8012, you would enter http://ChooChooVision8012:8012/admin into the web browser address.   *Take notice of the colon ":" between the two camera id values.*
- ✓ Book-mark this screen for future use.

Admin Screen Settings
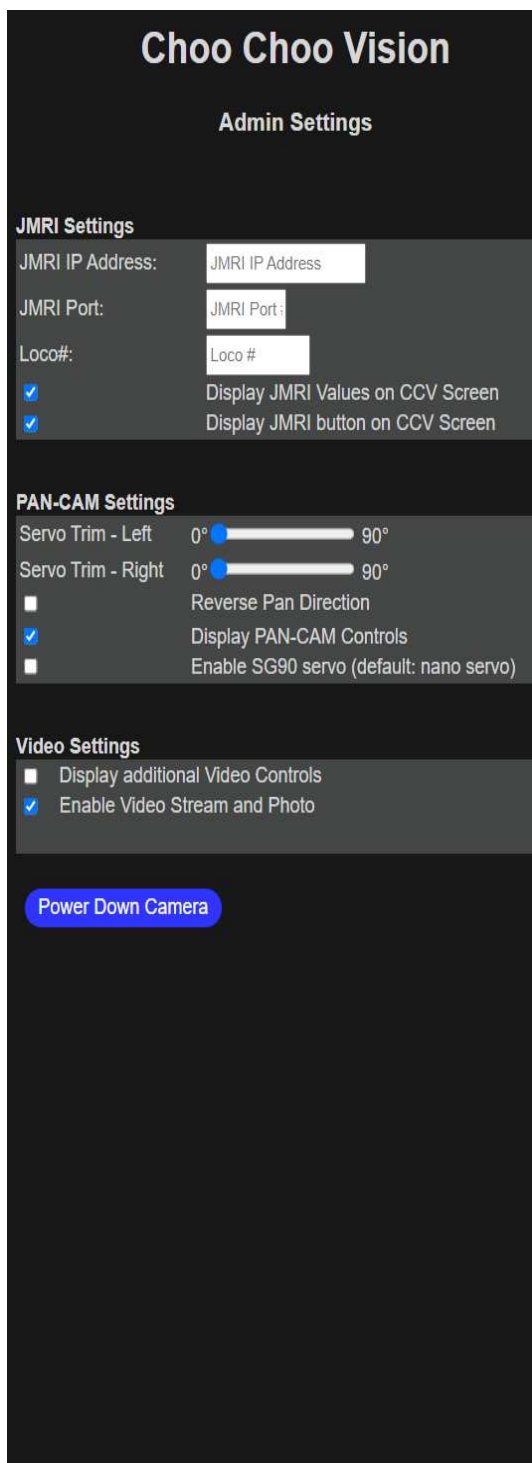
JMRI Settings

• JMRI IP Address: Enter the IP address of your JMRI Server. Note: JMRI's Web Server and WIThrottle services must be ON within JMRI (see the JMRI manual for more information)
• **JMRI IP PORT:** Port Number for the JMRI WiThrottle. This is typically 12080 or 12090, but can be set to any value within JMRI.
• **LOCO #:** DCC Address of the locomotive you wish to control with the JMRI throttle. If you leave this blank, the JMRI system will launch a list of all the JMRI Locos.

PAN-CAM Settings

• **Servo Trim – Left:** Adjusts the brightness level of the image
• **Servo Trim – Right**: Adjusts the contrast level of the image
• **Pan Direction**: Reverses the direction of the PAN controls Left/Right to Right/Left
• **Display PAN-CAM Controls**: Show the PAN-CAM controls on the Choo Choo Vision User Screen
• **Enable SG90 servo:** Adjusts the CCV Software to use an SG90 Servo instead of the default PAN-CAM nano servo.

Video Settings

• **Display Video Settings:** Displays additional video image controls on the Choo Choo Vision User Screen (AEC Sensor, ASP, AE Level, etc)
• **Enable Video Stream and Photo**: IMPORTANT: This setting enables / disables the video and photo capabilities on the main page. **It should normally be "checked" to allow you to view video on the main page.** You may wish to disable the video if you don't want remote viewers to see video.
• **Power Down Camera** – Turn the camera power off from the user screen. Note, in order to turn the camera back on, you must either press the ON button located on the left side of the camera, or use the magnet while under USB power. See *Powering your CCV camera for further details.*

User Screen Controls and Operation

The User Screen is the primary screen for controlling the camera.

The Choo Choo Vision user screen allows you to view the video feed, take still images, and manage camera settings. This page also is remotely viewable via the internet (with firewall port forwarding enabled on your router).

The Choo Choo Vision User Screen adjusting camera settings, opens a JMRI throttle, runs the PAN-CAM and start/stop the video feed, and take still images.

Accessing the Choo Choo Vision User Screen

To access the User Screen:

- Turn the camera ON
- Open a web browser on a computer or mobile phone. Note: The computer or mobile phone must be on the same WiFi network as the camera.
- Locate the camera's ID number (printed on the back of the camera).
- Enter the camera's URL into your web browser The proper format is http://ChooChooVisionxxxx:xxxx where xxxx is your camera ID.   *Notice the colon ":" between the ID numbers.*
- For example, if your camera ID is 8012, you would enter http://ChooChooVision8012:8012 into the web browser address.   *Take notice of the colon ":" between the two camera id values.*
- ✓ Book-mark this screen for future use.

Choo Choo Vision User Screen

Camera Main User Screen Controls

The Choo Choo Vision Main User Screen contains controls for adjusting camera settings, open a JMRI throttle, run the PAN-CAM and start/stop the video feed, and take still images.
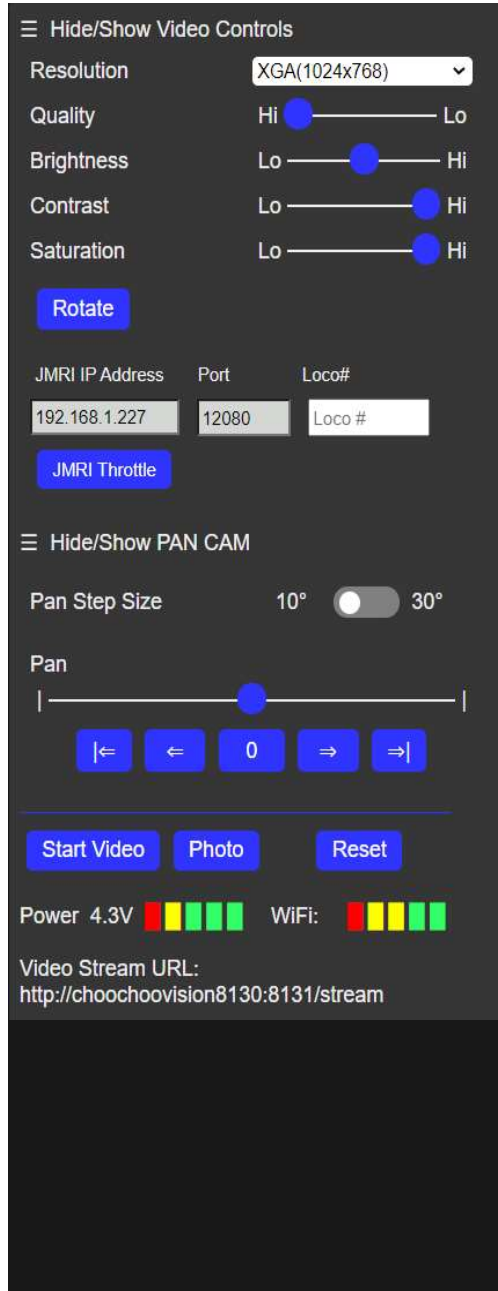
Adjusting Camera Image Settings

- **Resolution**: Sets the image size for the camera. Depending upon your internet speed, VGA mode may perform the best.
- **Quality:** Adjusts the image quality. Depending on your internet speed, you may need to adjust the Quality level.
- **Brightness**: Adjusts the brightness level of the image
- **Contrast**: Adjusts the contrast level of the image
- **Saturation**: Adjusts the saturation level of the image
- **Rotate**: Rotates the image 90 degrees.

- **JMRI IP Address:** IP Address of your JMRI Server
- **PORT:** Port for your JMRI Server
- **Loco#:** DCC address for the LOCO you wish to control. Leave blank to display all JMRI Locos.
- **JMRI Throttle:** Opens the JMRI throttle to control your locomotive. You must have JMRI's Webserver and WiThrottle running on the JMRI server.

- **Pan Step Size**: Sets the number of degrees the PAN CAM will move when using the **<=** or **=>** buttons.
- **Pan Slider**: Moving the Pan slider will move the Pan-Cam left or right.
- **Pan** (|<= , 0 , =>|) buttons: Pans the camera to preset angles of -90 degrees, 0 degrees, or +90 degrees.
- **Pan** (<= , =>) buttons: Pans the camera in increments of 10 or 30 degrees.

- **Start Video**: Starts the video stream.
- **Photo**: Takes a single photo from the camera.
- **Reset Camera**: Remotely reboots the camera module.
- Power Meter: Displays the power available to the camera. Under external power, the Power Meter will typically read 4.0 to 4.2 volts. Under battery power, the Power Meter will display the battery voltage. The camera will automatically shut down when the voltage is less than 3.5 volts.

- WiFi Meter: Displays the strength of the WiFi signal received by the camera.   The WiFi Meter can help you identify areas on your layout with poor WiFi coverage.
- Video Stream URL: Displays the raw video feed without the control panel. Enter the IP address into a web browser to view the camera control screen and display the video. **Note: Only one web browser at a time can be connected to the camera.**

Connecting your PAN-CAM Accessory

The basic steps to connect your PAN-CAM are:

Power OFF the Camera → Attach the PAN-CAM to the camera → Plug the PAN-CAM into the Grove Port → Insert the Lens into the PAN-CAM mount

Steps:

- Power OFF the camera.
- Attach the PAN-CAM unit to the front of the camera body.
  - Slide the PAN-CAM accessory it touches the end of the camera.
  - Ensure the clips on the PAN-CAM accessory are seated to the camera body.
- Plug the PAN-CAM accessory into the camera:
  - Locate the wires and connector plug on the PAN-CAM accessory.
  - Locate the white GROVE port on the bottom of the camera
  - Plug the PAN-CAM connector into the GROVE port.
- Insert Lens into PAN-CAM
  - Locate the round hole in the PAN-CAM lens mount
  - Gently insert the lens thru the hole
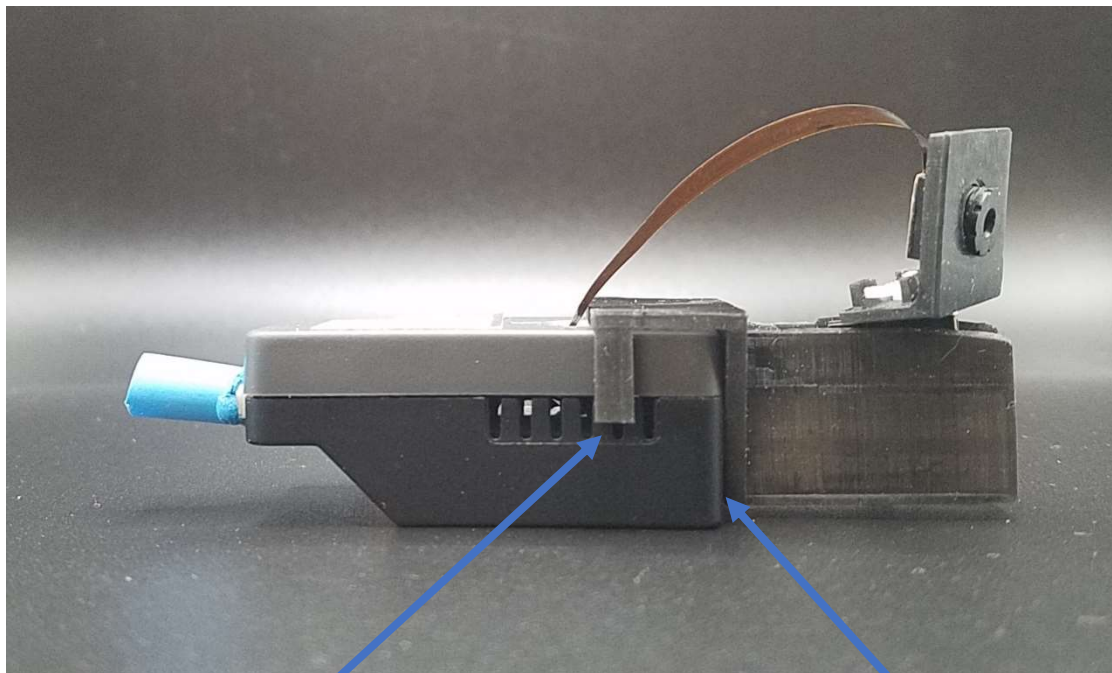
Mounting clips will "click" when fully seated.

Place PAN-CAM against the end of the camera.
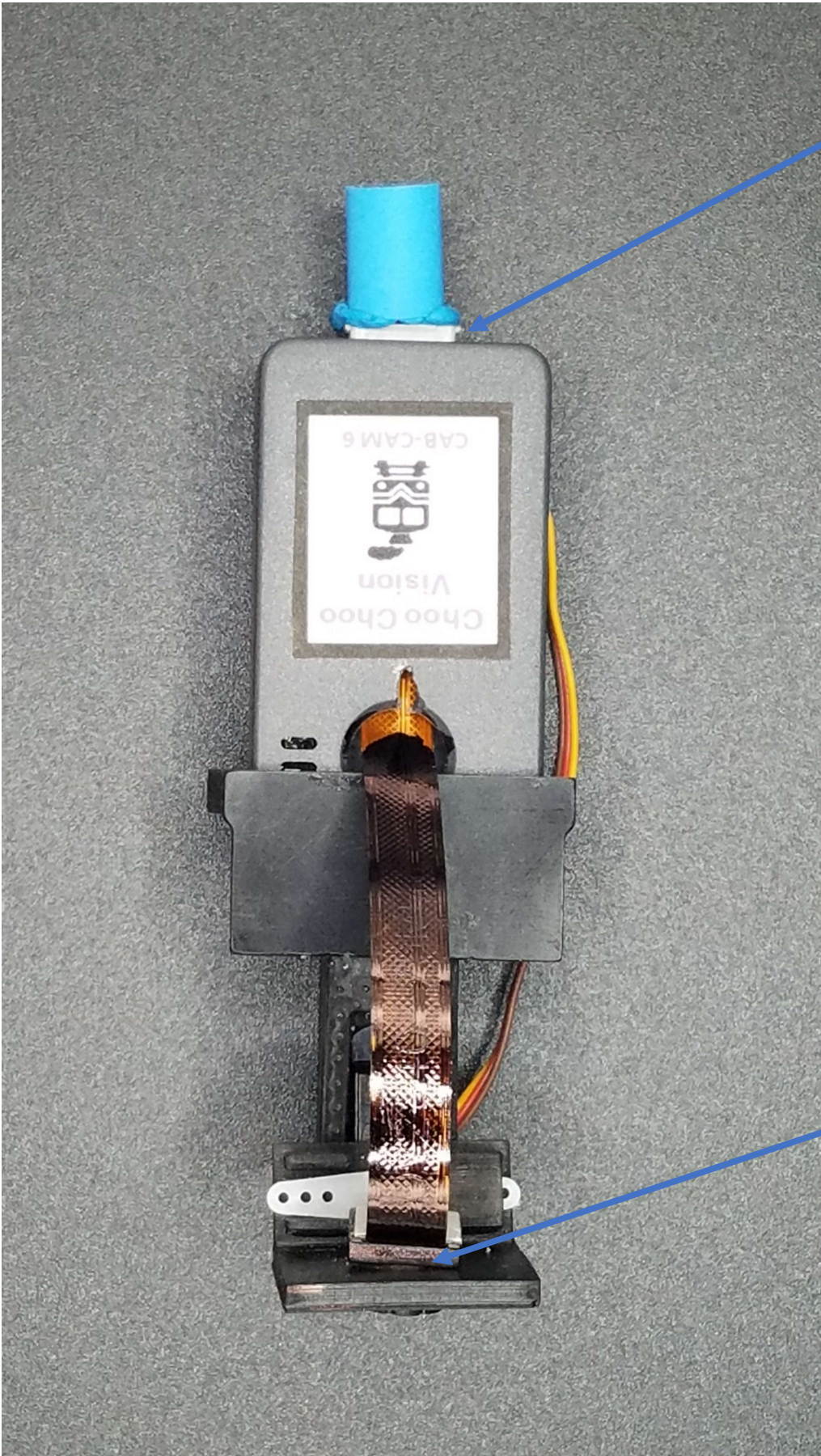
Insert PAN-CAM plug into the white connector on the back of the camera

Insert lens into mounting hole

Testing the PAN-CAM installation

- Plug the camera into USB power.
- The camera status light should blink quickly for 2 seconds and go off.
- After a couple of seconds, the camera status light should turn on (dimly).
- The PAN-CAM will "center" itself.
- Open the Choo Choo Vision user screen and un-hide the PAN-CAM controls on the menu
- Move the PAN-CAM fully to the right using the =>| button
- Move the PAN-CAM fully to the left using the |<= button
- If the PAN-CAM is moving in the wrong direction, press the "Reverse Pan Direction" button

Adjusting the PAN-CAM downward angle

The PAN-CAM lens mount is set at a 10-degree downward angle to provide a more realistic view from the top of the CAM.

You can adjust the downward angle of the PAN-CAM by positioning the tiny servo inside the PAN-CAM body. Once you have set the appropriate angle, you can secure the servo to the PAN-CAM body using blue mounting putty.

If you decide to use the PAN-CAM for trackside viewing or railfanning, you can adjust the position of the servo to an appropriate angle.

Product Support:

If you have any question regarding the setup, use, or suggestions, please feel free to contact us.

- Email: support@ChooChooVision.com
- Website: Send a request via our website www.ChooChooVision.com/contact