INSTRUCTION MANUAL

CCFC-PTZ
Supplementary Manual

October 2019

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CCFC-PTZ

1. Introduction

Figure 1-1 CCFC-PTZ

The CCFC-PTZ (Figure 1-1 *CCFC-PTZ*) is designed to provide the additional requirements of a pan-tilt mount to the CCFC Field Camera. The CCFC-PTZ offers a wide operating temperature range and complimentary rugged design to that of the CCFC Field Camera.

Please note that the CCFC-PTZ comes equipped with it's own firmware that allows for functionality with the Pan Tilt Mount. The majority of the setup for the CCFC-PTZ is the same as the general CCFC Field Camera with the exception of the Lens Positions and the Assembly to the Pan/Tilt Mount. Please refer to the CCFC Field Camera Manual for general setup instructions.

2. Specifications

Power Supply Operating
- 12 Vdc Input voltage (+/-5%)

Current Draw Specifications
- ~125 mA per axis
- 0mA with no motion

General
- Operating Temperature: -30°C to + 70°C
- Weight: 2.27 kg (5 lb)
- IP68 Rated
- Powder Coated Aluminum w/ stainless steel fastners

Dimensions
- Depth w/ connector: 12.9 cm (5.08")
- Depth w/out connector: 12.01 cm (4.730")
- Height: 14.73 cm (5.80")
- Width: 15.77 cm (6.21")

Speed
- Pan: 28 deg/sec
- Tilt: 8 deg/sec

Rotation Limits
- Pan: 0 to 350 degs
- Tilt: -90 deg Down to +30 deg Up

Capacity
- 13lbs or less

3.   Initial Inspection

- Upon receipt of the CCFC-PTZ, inspect the packaging and contents for damage. File any damage claims with the shipping company. Immediately check package contents against the shipping documentation. Contact Campbell Scientific about any discrepancies.

- The CCFC-PTZ ships with three parts: CCFC Camera, Pan/Tilt Base and Controller (pn C3380) housed in a small enclosure.

4.   Cautionary Statements

Although the CCFC-PTZ is designed to be a rugged and reliable device for field use, care should be taken when handling or moving it to avoid aesthetic damage.

The Pan Tilt Base does not come equipped with the slip ring, therefore if the base is positioned to 355 and needs to move 1 degree, the base will move to that position by moving counterway.

5.   Factory Setup

Table 7-1 *CCFC Factory Default Configuration* outlines the CCFC factory settings that are relevant for initially communicating with the camera.

TABLE 5-1 CCFC Factory Default Configuration	
Configuration Setting	**Value**
Power Mode	Fully On State
Wi-Fi IP Address	10.0.0.1
Link Local IP	169.254.99.99
Ethernet Network IP Address	Acquired automatically using DHCP
Serial I/O Port	RS-232 or RS-485
RS-232 Baud Rate	115200
PakBus® Address	55

NOTE: The Pan Tilt settings cannot be created or modified using device configuration, therefore the Web Browser interface should be used to configure these settings.

6. Cables/Wiring

6.1 Power Cable Connections

The wiring for the Power Cable connector and which wires need to be connected for the intended camera application is as shown in Table 9-1 *Power Cable Connections*. The Orange Cable provides power to the Controller Enclosure, this is the only cable that requires wiring. The other two cables run from the controller to the CCFC Field Camera (Black) and the Pan Tilt Base (Grey).

Note   The Controller Enclosure does not require any setting changes, therefore the enclosure should never be opened.

TABLE 6-1 Power Cable Connection -ORANGE			
Color	**Function**	**Connection**	**When Not Used**
Black	Power Ground	System Ground	
Red	Input Power	Power Source 12Vdc.	

6.2 Power & I/O Cable Connections

6.2.1 CCFC Camera Power & I/O Cable Connection

The Black Cable (with 6 pin connector) runs from the Controller Enclosure to the the CCFC Camera's Power & I/O connector. This cable provides power to the camera and allows the camera to send commands to the Pan Tilt Controller.

6.2.2 Pan Tilt Base Power and I/O Cable Connection

The Grey Cable (with 15 pin connector) runs from the Controller Enclosure to the Pan Tilt Base. The cable provides power to the Pan Tilt Base and allows the Controller to send commands to the Pan Tilt Base.

7.   Connecting to the Web Interface

The CCFC supports an automatic IP address configuration in situations where the camera is directly connected, via an Ethernet cable, to a computer. If using this method, input the IP address 169.254.99.99 into the Internet browser.

Refer to Section 13.2 *Setup Using Ethernet* for details on making the initial network connection to the camera. To establish communications with the camera, use one of the methods previously discussed. Enter the appropriate IP address in the address bar of the browser. After typing the address, the homepage (*Dashboard)* of the CCFC camera should appear, as shown in Figure 14-1 *Dashboard - Desktop view*.

The camera ships with automatic network configuration via DHCP enabled. It is highly recommended to keep track of any changes made to the network settings.

7.1   Setup Using Wi-Fi

The CCFC is Wi-Fi enabled. While the camera is powering up, start the computer/mobile device and connect to the camera via its Wi-Fi network. The camera will appear as *CCFC-9999* (for example), where *9999* is the last four digits of the camera's serial number, on the Wi-Fi network.

Once connected to the camera Wi-Fi, open a web browser and enter the default Wi-Fi IP address into the address bar: http://10.0.0.1. This directs the user to the camera's web interface where the camera can be configured.

7.2   Setup Using Ethernet

7.2.1   Link Local IP Address Auto-Configuration

The CCFC supports an automatic IP address configuration in situations where the camera is directly connected, via Ethernet cable, to a computer without the need of a DHCP server.

This feature is automatically enabled in the camera and is transparent to its normal operation. In this situation, the camera will be accessible using the IP address 169.254.99.99. This address will be valid for accessing the camera in any network configuration.

| Note	In order to use Link Local, the computer connecting to the CCFC must be configured to use DHCP. If the computer is configured to use a static IP, one of the remaining interface arrangements will need to be used.

8. Lens Position

The camera comes pre-configured with 15 default lens positons, which can be edited to suit a user's requirements. These positions are saved to the camera memory to optimize media capture events. If no lens position is set for the event, the camera will continue to use the current position.

The CCFC-PTZ allows for the position of the camera to be moved as well as setting the zoom and focus. When moving the camera the arrows will move the camera approximately 50% of the viewable area, therefore a zoomed in image will allow for fine movements and zoomed out images allow for large movements. As with the general setup of the CCFC please ensure that the configured lens position is associated with the capture mode.
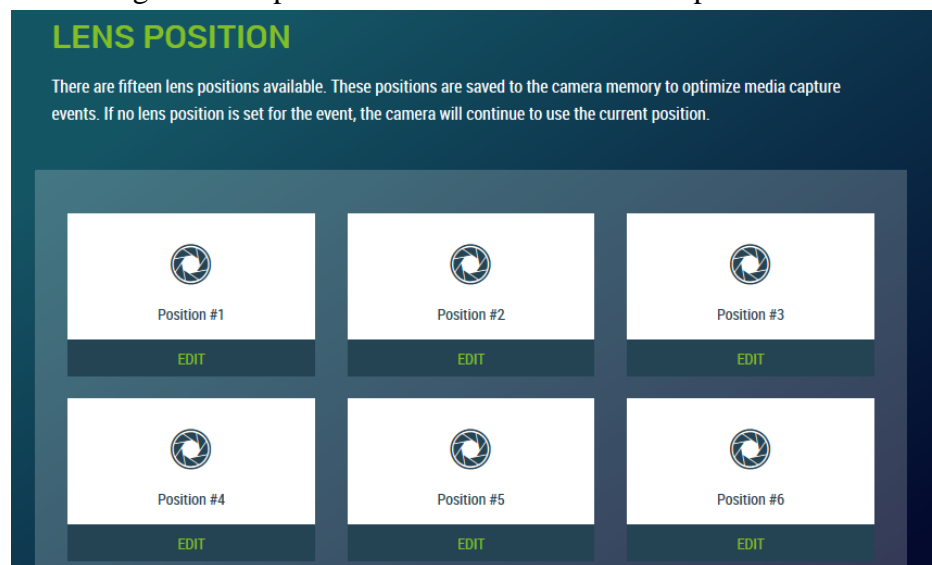
Figure 2-1 *Lens Position*
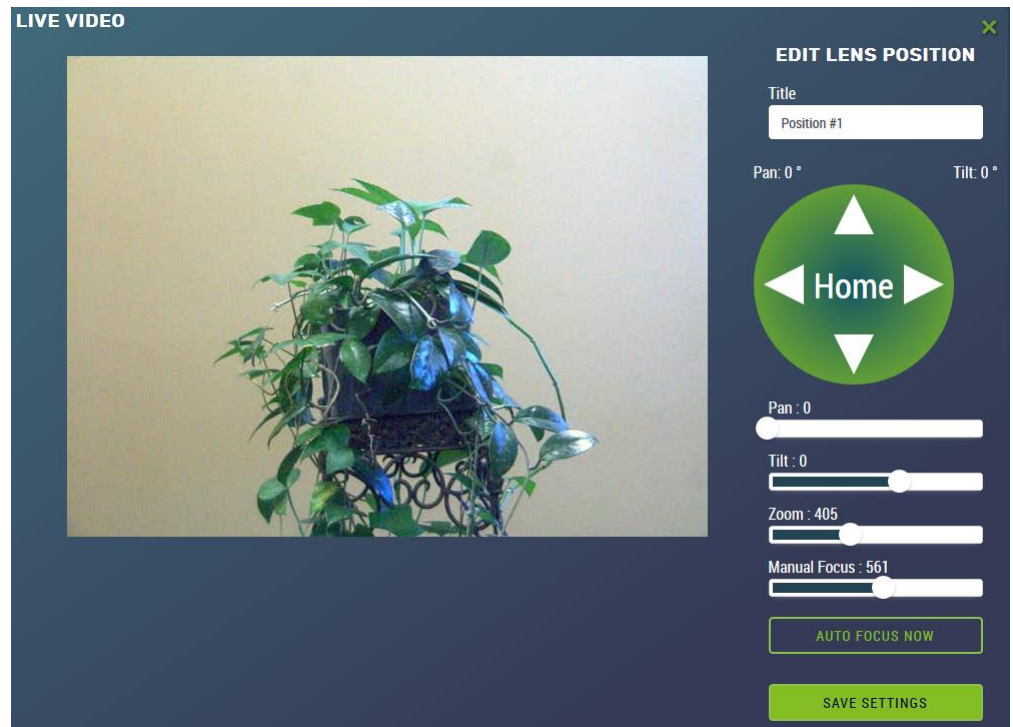
Figure 2-2 Lens Position Modal
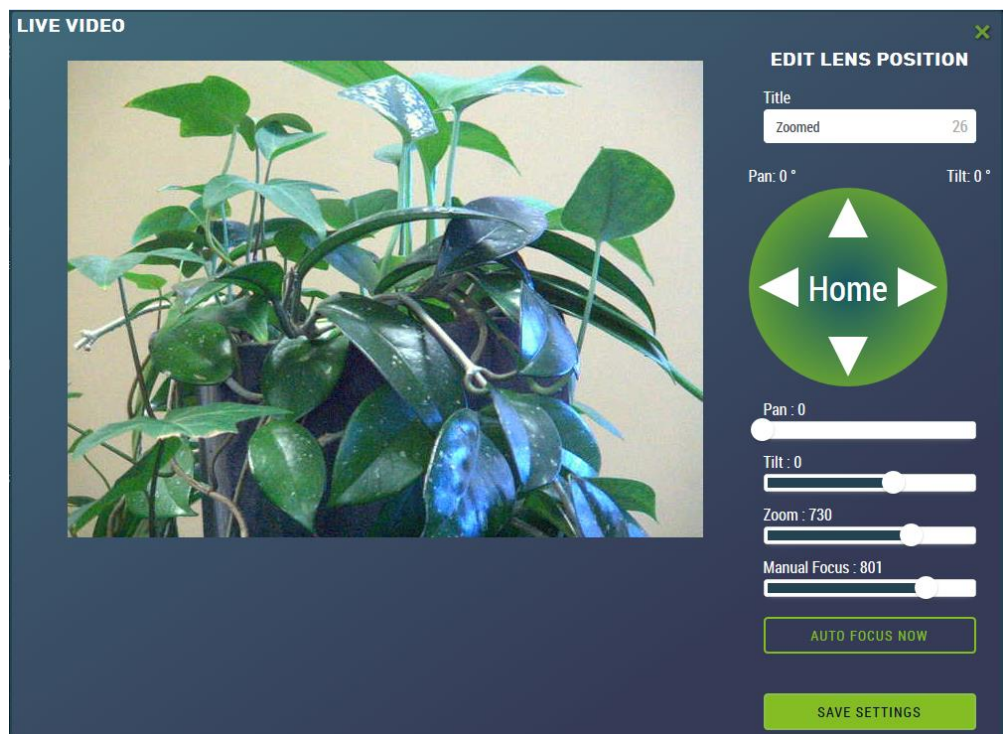
Figure 2-3 Lens Position Modal (in Capture Modes)

| TABLE 8-1 Lens Positions Modal		
Variable	**Allowable Values**	**Description**
Edit	Button	Opens *Live Video* to view and edit current lens position.
Title	Text	Name the lens position in order to navigate to it at a later date.
Pan Tilt Button	Home/Up/Down/Left/Right	The Green Pan Tilt "Home" sets the mount back to the starting position. The Up/Down/Left/Right arrows moves the mount to tilt (Up and Down) and pan (Left and Right).
Zoom	Slider	Zooms the camera lens in and out (close-up to wide angle).
Manual Focus	Slider	Slider automatically updates when the Zoom slider is moved, as the camera automatically focuses on the center of the screen. The Manual Focus slider will only be used to adjust the focus on an item that is not in the center of view.
Auto Focus Now	Button	Select for auto focus.
Apply to Capture Mode	Checkboxes	Select to associate the lens position to an existing capture mode.
Save Settings	Button	Saves *Lens Position.*

To ensure a clear photo, please refer to the table below referring to the zoom level and minimum focal length.

TABLE 8-2 Minimum Focal Length	
Zoom Position	**Minimum Focal Length (centimeters)**
0 -600	10
700	75
800	500
900	300
1000	80

When multiple lens positions are selected for a capture event the captures will always occur in the same order: starting with lens position 1, then 2, 3 and 4. If both photos and videos are enabled for the capture event the photo capture will Mounting

9.   Pan Tilt Mount

The camera enclosure is designed to be environmentally sealed for outdoor installations. The enclosure provides protection from moisture or high humidity. It is not intended for operation under water. All that is required is an appropriate mounting fixture.
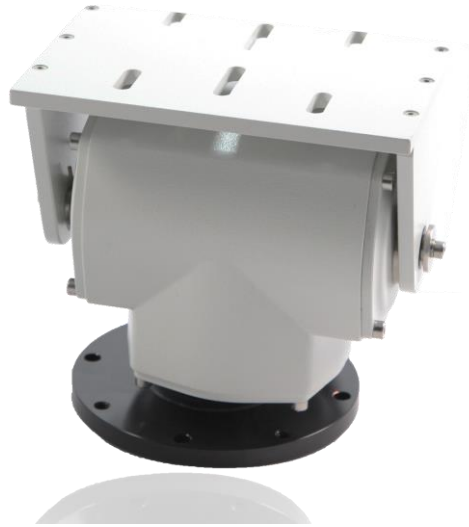
Figure 3-1 CCFC Pan Tilt Base

The camera is equipped with a set of three ¼-20 threaded mounting holes (see Figure 22-2). These mounting holes are centered along the bottom of the camera and are spaced 1.0" (25.4 mm) apart from one another. At least two of the ¼-20 threaded holes are required for mounting the camera. Use the two supplied ¼" bolts with washer and lock washer to affix the camera to the pan tilt mount.

Figure 3-2 CCFC Mounting Holes

Figure 3-3 CCFC Mounted on Pan Tilt Base

Figure 4- Pan Tilt Controller

10. Maintenance

The CCFC-PTZ require no maintenance for the Pan Tilt Base. Please refer to the CCFC Manual for general CCFC Camera maintenance requirements.