iPano™ AllView Pro™ Camera Mount
Instruction Manual

Product #8600

This product is a precision instrument. Please read the included QSG before assembling the mount. Please read the entire Instruction Manual before operating the mount.

If you have any questions please contact us at support@ioptron.com

Table of Content

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1. iPano™ AllView Pro Mount Overview

The all new iPano™ AllView Pro gigapixel camera mount is a professional solution for gigapixel panoramas. A sturdy design with smooth and high precision pan/tilt movement make the job easy.

The iPano™ mount is based on iOptron's astronomical equipment and electronics design. The mount is quite, precise, sturdy and easy to operation. The built-in WIFI adapter enables wireless and network operation of the mount.

Features:

- Work with most DSLR cameras and lens
- Can be operated as both AllView mount or rotating mount
- 5 kg (11lbs) payload for AllView and 10 kg (22lbs) payload for rotating mount
- Weight 3.3 kg (7.3lbs)
- High resolution and high precision
- High stability with zero backlash design
- Two camera mounting positions: horizontal or vertical
- Low power consumption for long operation time
- Lithium rechargeable batteries
- Built-in WiFi connection for computer/tablet/SmartPhone
- Included iPano™ Commander for computer control
- Remote, RS232 port for remote control
- Customer firmware upgradeable
- Self-locking during power outage
- 7 electronic trigger cables included
- Padded carrying bag included

2. iPano™ AllView Pro Mount Assembly

2.1. Parts List[1]

The iPano mount includes:

- iPano AllView Pro mount
- 8.4V 2A battery charger
- RS232 serial cable (RS232-RJ9)
- Electronic trigger cables X7 (Canon N3, Canon E3, Nikon 10-pin, Nikon MC-DC1, Nikon MC-DC2, Olympus RU-UC1, SONY RM-S1AM)
- Vertical mounting dovetail plate
- Vertical mounting dovetail plate screws X2
- 1/4" to 3/8" Camera Convert Screw Adapter
- Hex key wrench
- Padded carrying bag
- Panoweaver 9.1 Standard Edition by Easypano (download from Easypano website)
- One year limited warranty (90 day for Li-ion battery)

Figure 1. Package contents

ONLINE RESOURCES *(check at* ***www.iOptron.com)***

- Quick Start Guide
- This instruction manual
- Mount firmware upgrades (check online for latest version)
- iPano™ Commander
- Reviews and feedback from other customers
- Accessories

[1] US market only. Actual contents may vary.

2.2. Identification of Parts

Figure 2. iPano mount assembly

1. Height Lock
2. Primary Arm
3. Camera Mounting Platform
4. Dovetail Mounting Module
5. Chassis Bubble Level
6. Height Scale
7. Camera Level Indicator
8. Auxiliary Arm
9. Key Pad
10. Trigger Cable Port
11. Power Switch
12. DC Input (7.4V to 8.4V)
13. REMOTE Trigger Port
14. RS485 Port
15. RS232 Serial Port
16. Dovetail Saddle Locking Knob
17. Quick Release Plate Locking Knob
18. Camera Quick Release Plate

2.3. iPano Mount Assembly

2.3.1. Charge the battery

The iPano AllView Pro Mount uses a lithium rechargeable battery to power the mount. Please using the included wall plug charger (**8.4V/2A**) to full charge the battery after receiving the mount. The LED indicator remains RED during the charging process and will turn to GREEN when charge is complete.

DO NOT charge the mount with a **12V** AC adapter/battery pack or a car cigarette plug. **ONLY** charge the mount using the included battery charger! Charge the mount battery before every operation.

NEVER charge the battery when it is below 0°C (32°F)

A low battery waning (a flashing battery status indicator or beeps) will occur if the battery is low. You may keep using the mount by plug in a wall plug charger or a 7.4V-8.4V DC power source through DC port #12. **NEVER** use this way when it is below 0°C (of 32°F).

If you mount equipped a Direct DC Power Socket (*DC 5.5mmX2.1mm*) located at the bottom of the mount (Figure 3), you can use a 7.4V portable power pack to keep operating the mount. ***Turn off the mount before switch to portable power pack.***

Figure 3. Direct Power Socket for 7.4V portable power pack

2.3.2. Attach the Mount

Carefully thread the iPano mount onto your tripod and make sure it is securely tightened. The mount base has a 3/8” threaded socket. If your tripod only has a 1/4” threaded post, a 1/4” to 3/8” tripod adapter screw (included) is needed,

Figure 4. Install the mount onto a tripod

2.3.3. Install the Dovetail Mounting Module

Release the Dovetail Saddle Locking Knob **#16** under the Camera Mounting Platform **#3**. Retreat the tip of the Locking Knob **#16** below the surface of the Platform. Slide the Dovetail Mounting Module **#4** into the Camera Mounting Platform **#3**. Tighten the Locking Knob.

Figure 5. Install dovetail mounting module

2.3.4. Attach the Camera

Remove the Camera Quick Release Plate **#18** from the Dovetail Mounting Module **#4** by releasing the Plate Locking Knob **#17**. Install the Quick Release Plate **#18** onto the camera tripod mounting hole of your camera and align the edges. Tighten the brass screw using a coin if needed, as shown in Figure 6.

Figure 6 Mount a Quick Release Plate onto a camera

Mount the camera onto the Dovetail Mounting Module **#4** by inserting the Quick Release Plate **#18** into the dovetail saddle. If the center of the lens of the camera ***is aligned*** with the tripod mounting hole, just align the zero mark on the Quick Release Plate to the one on the dovetail saddle (Figure 7).

Figure 7 Align the zero marks

If the lens of a camera ***is off-centered*** from the tripod mounting hole by a distance C, as indicated in Figure 8, you need to shift the zero mark on the Quick Release Plate by C to the zero mark on the dovetail saddle.

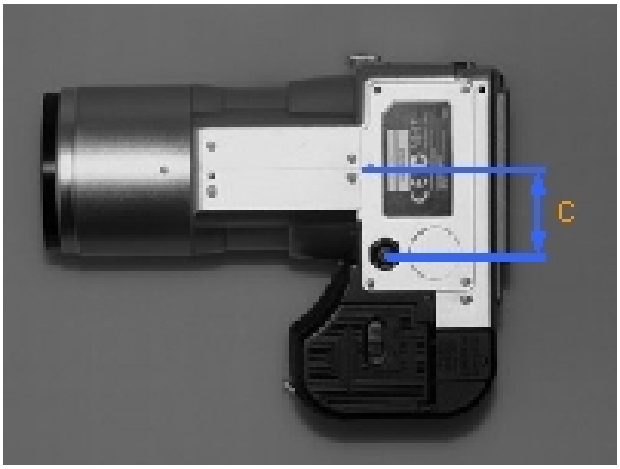


Figure 8 A camera with an off-centered lens

Turn the Quick Release Plate Locking Knob **#17** to lock the camera.

2.3.5. Level the Mount:

Adjust the tripod legs to level the mount by reading the Chassis Bubble Level Indicator **#5** on the Mount Base, as shown in Figure 9.

Figure 9 Level the mount

Use arrow button ▼ or ▲ to adjust the level of Camera Mounting Platform **#3** by reading the Camera Level Indicator **#7**, as shown in Figure 10. **Use Shortcut Key to set the zero position (refer to 3.3.3).**

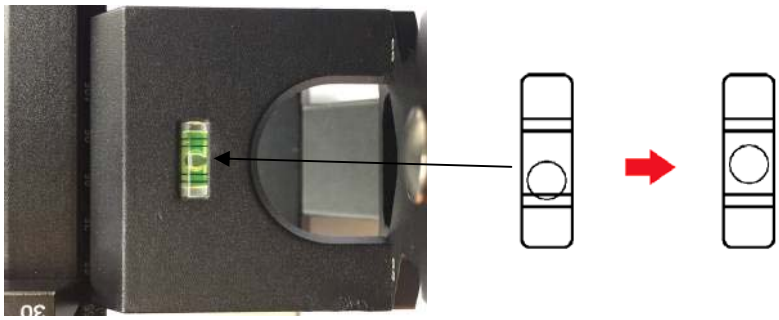


Figure 10 Level the camera on the mount

2.3.6. Adjust the Camera

When taking photographs for a stitched panorama, the entrance pupil of the camera lens needs to be kept in a constant position when the camera is rotated to point in a different direction for each shot. **This point is sometimes referred to as the No-Parallax Point (NPP), or Nodal point, or Entrance Pupil,** which can be accomplished by adjusting the Camera Mounting Platform **#3** back and forth, and Height Scale **#6** up and down, as shown in Figure 11.

Figure 11 Adjust camera No-Parallax Point

There are two positions for Camera Mounting Platform **#3**: 65mm and 80mm, as shown in Figure 12. If the distance from the base of the camera to the center of the lens is smaller than 65mm (see Figure 13), use the default setting on the Height Scale **#6** (the inner scales). Otherwise, if the distance is greater than 65mm, you need to lower the Camera Mounting Platform **#3** to the 80mm position on the Height Scale **#6** and use the outer scales.

Figure 12 Maximum camera mount height 65mm and 80mm

Adjust Camera Height Position

Find the **height number** of the camera, the distance from the base of the camera to the center of the lens. For example, the height number of a Canon EOS 5D Mark II is 43.5mm. Release Height Locks **#1** on both Primary Arm **#2** and Auxiliary Arm **#8**. Adjust the camera by moving the Camera Mounting Platform **#3** up and down so that the Height Scale **#6** is set at the 43.5mm by reading the inner scale.

Figure 13 Adjust camera height position

Adjust Camera No-Parallax Point

Where is the No-Parallax Point? The physical location of the optical center is unique for each lens. For prime lenses, the No-Parallax Point (with focus at infinity) is stationary. For zoom lenses, however, the No-Parallax Point typically shifts for each focal length. The location of the No-Parallax Point is commonly expressed as its distance, in millimeters.

Adjust the camera position based on the total entrance pupil distance. This number is the sum of the camera **length number,** (the distance between the middle of the tripod mounting hole to the base of the lens base, or base for adapter tube,) and the entrance pupil distance of the lens.

For example, the length number of a Canon EOS 5D Mark II is 38.5mm. The entrance pupil distance of a Canon EF 16-35 F2.8 lens is 79mm *at 16mm focal length*. Therefore, the total entrance pupil distance (or NPP) is:

38.5mm +79mm=117.5mm.

Figure 14 Adjust camera entrance pupil position

Slightly loosen the Dovetail Saddle Locking Knob **#16**. Move the Dovetail Mounting Module **#4** back and forth so that the 117.5mm mark on the dovetail bar is aligned to the edge of the Camera Mounting Platform **#3** (refer to the inlet in Figure 14). Tighten the Dovetail Saddle Locking Screw **#16**.

Note: Zoom lens has different entrance pupil distance at different focal length.

You can find camera mounting hole off-center, camera height, camera length and lens entrance pupil position parameter from panotools.org (http://wiki.panotools.org/Entrance_Pupil_Database).

A More Practical Way to Find the NPP

The NPP can be determined by experimentation. Here I show to do it:

- Find two vertical objects; one near, one far. Position your equipment so that these objects line up in the viewfinder;
- Level the iPano and camera;
- Set the focal length of your camera;
- Start out by positioning the approximate center of your lens over the axis of rotation;
- Now pan the mount left;
- If the rear object appears to shift to the left, then you are ahead of the No-Parallax Point. Slide the Dovetail Mounting Module **#4** forward and try again;
- If the rear object appears to shift to the right, you are behind the No-Parallax Point. Slide the Dovetail Mounting Module **#4** back and try again;
- When the optical center of the lens is directly over the axis of rotation, the rear object will not appear to move relative to the front object;
- Continue until objects stay aligned when you pan left and right;
- Record your results so that your setup can be re-created.

3. iPano Mount Operation

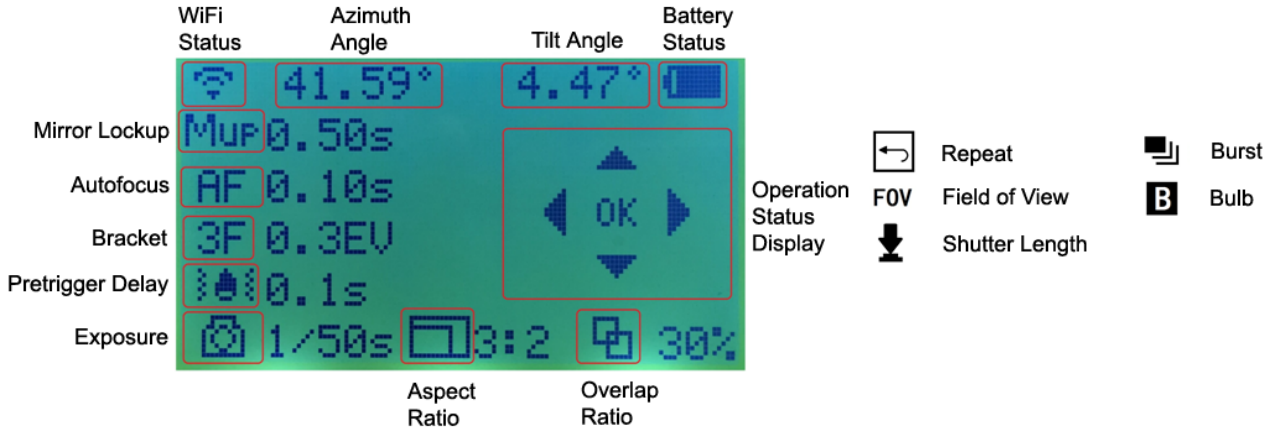
3.1. Key Pads Description

The following shows the keypads and its description.

▲	Camera tilt up
▼	Camera tilt down
◄	Mount pan left
►	Mount pan right
OK	Confirm
MENU	Menu
X	Return

3.2. LCD Display Panel and Icons

The following shows a LCD display main screen (left), with the description of each icon. The right image displays more icons and their descriptions.



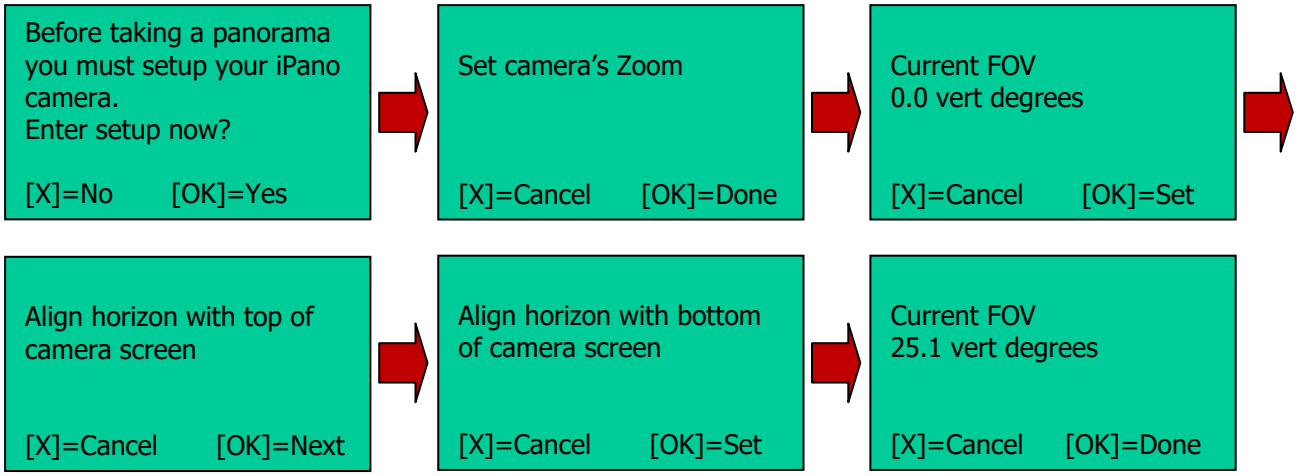
3.3. First Time Use and Shortcut Key

3.3.1. First Time Use

If it is the first time operating the mount, the AllView Pro mount will ask you to set up the iPano camera.

The system will ask:

- ***Enter setup now***? Press OK. If you press NO to skip, you'll be asked to set it up later;
- It will display current FOV (field of view) of your camera, which is 0.0 degree. Press OK to continue.
- ***Set camera's zoom***, then press OK;
- ***Align horizon with top of camera screen***: use ▼ key to tilt the camera downward until the top of view finder/display screen aligned with horizon, then press OK;
- ***Align horizon with bottom of camera screen***: use ▲ key to tilt the camera upward until the bottom of view finder/display screen aligned with horizon, then press OK.



Now you've set the camera reference.

3.3.2. Test Electronic Shutter

Select an electronic trigger cable that is for your camera. Plug one end to your camera and the other end into mount Trigger Cable Port #10 on the side of the mount. Turn both mount and camera on. **Press OK button to test the shutter.** You should hear camera shutter operation.

The iPano mount comes with 7 trigger cables. If the one for your camera is not included, please contact iOptron for additional cable or cable information.

3.3.3. Shortcut Key

Press and hold **MENU** button to bring up the Shortcut Key menu. After level the camera, return the Camera Mounting Platform back to level position, you may select ***Set Zero Position*** function to set the current position as the Zero Position.

3.4. Quick Test Run

- Set up the mount and camera;
- Connect electronic trigger cable;
- Turn on the mount;
- Set FOV by following the on screen instruction, if this is the first time use the mount;
- Press **MENU** button to bring up the operation menu; select ***Matrix Panorama*** and press OK;
- Select one of 8 paths;
- Follow the on screen instruction to select the starting point and the end point by using ◄, ►, ▲ or ▼ key and press OK;
- Preview the Panorama. Press OK to show 4 corners and the center of a expected panorama;
- The screen will display how many photos will be taken, press OK;
- You need to confirm based on the mount and camera settings and make sure that:
    - Camera on?
    - Balance locked?
    - Exposure locked (no auto exposure)?

- Focus locked (no auto focus)?
- Flash off?

- Select Start and press OK to start the test run using default setting parameters.

3.5. Turn Off the Mount

Remember to turn the mount power off at the end of the session. Charge the mount for next time use.

4. Full Operation Menu

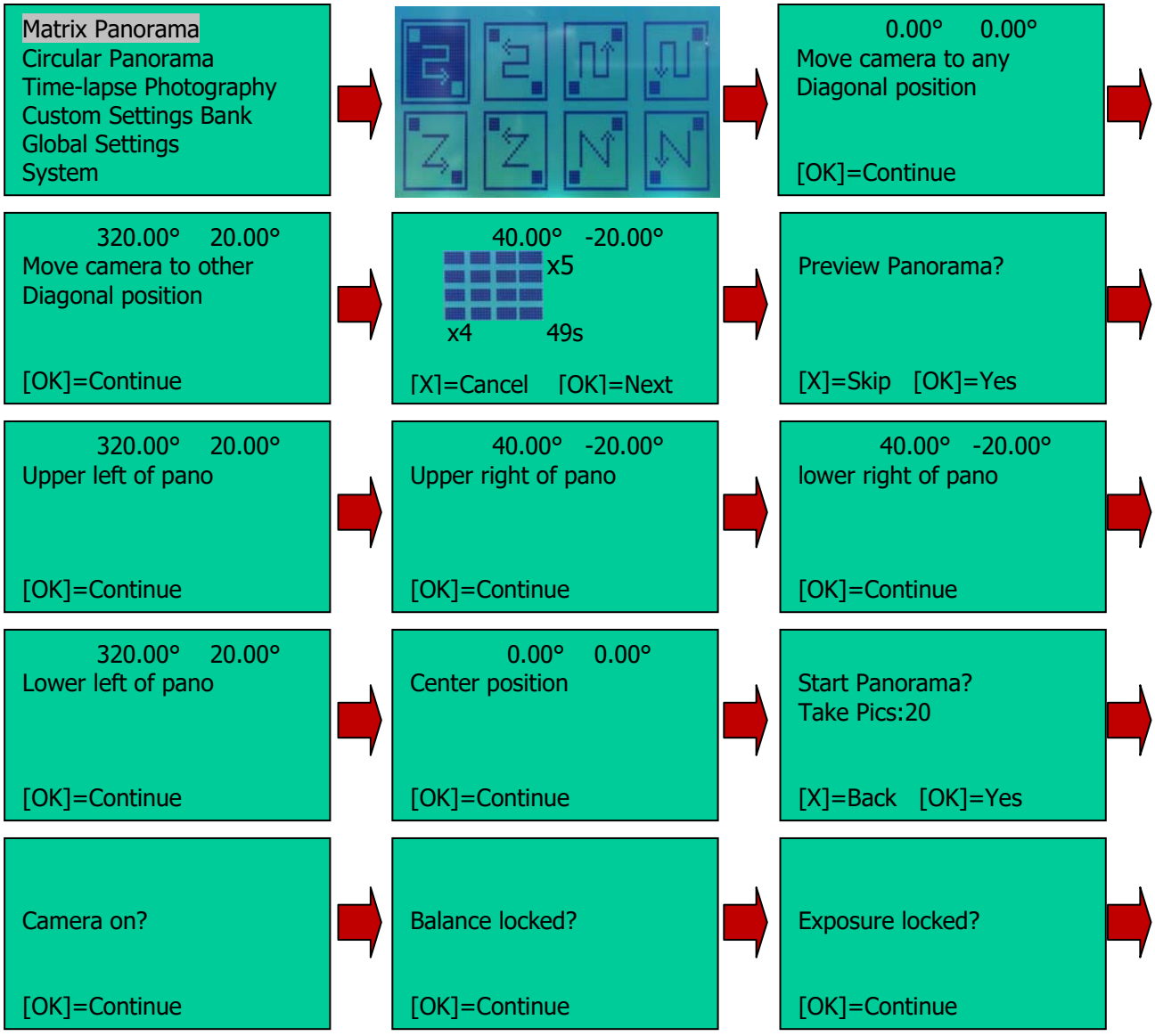
4.1. Matrix Panorama

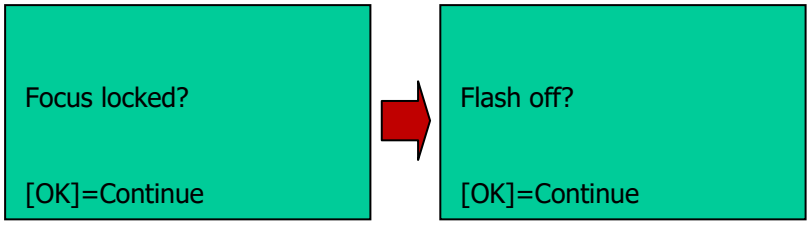
The Matrix Panorama will provide a rectangular panorama photo. After setup the mount and camera, phase the camera to the middle of the scene. Press **MENU** => ***Matrix Panorama***. The system will provide 8 moving paths to choose.

Move the cursor by press the arrow button and press OK to choose one. Follow the on screen instruction to move the mount. For example, slew the camera to point to upper left corner using ◄ and▲ keys if we choose path 1. Press OK. Then move the camera to point lower right corner with ►and ► keys, press OK. The LCD will display the number of photos in each row and column the camera will take, and the total time it needs, based on the camera and mount settings.

The mount will ask if you want to preview the panorama. Press X to skip the preview or OK to preview. The mount will provide 5 positions for previewing: upper left corner, lower left corner, upper right corner, lower right corner and center position. Press OK to start taking photos after previewing. If the ***Check List*** is ON, the mount will ask a set of questions based on your parameter settings (see section 4.4) before take the first photo to make sure that the camera is set correctly.

Here is an example to take a Matrix Panorama from upper left corner (340°,20°) to lower right corner (20°,-20°)





Using a 3x4 Matrix Panorama as an example. The mount will take the photo with the following path, if the path 1  is chosen.

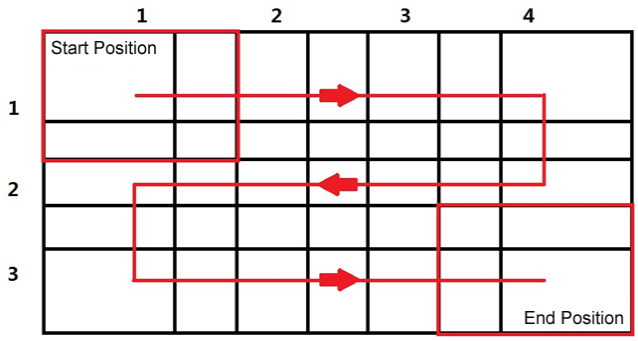


Figure 15. Panorama moving path 1

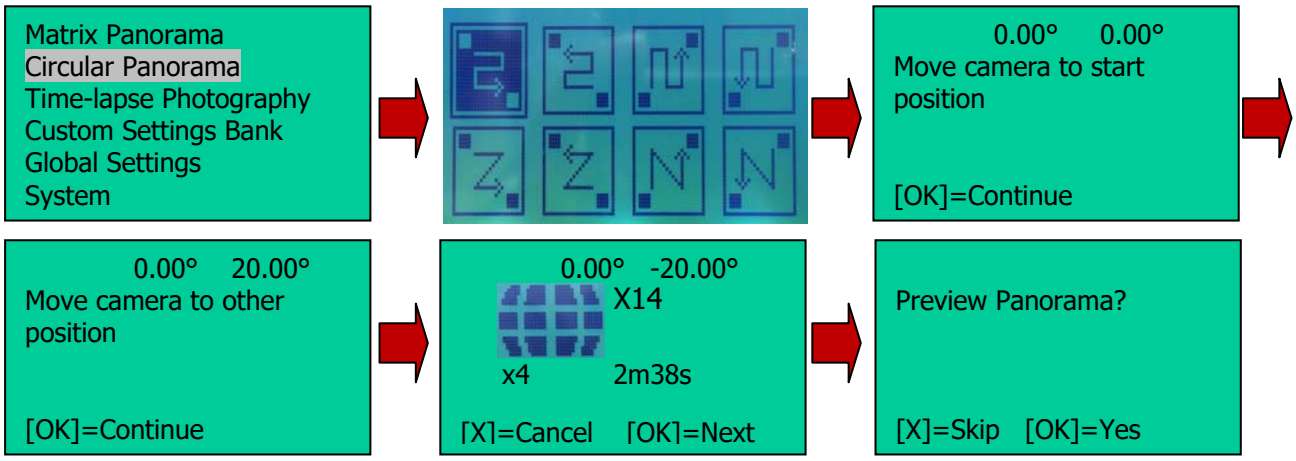
The mount is set to a default 3:2 Aspect Ratio and 30% Overlap.

4.2. Circular Panorama

The Circular Panorama will take 360 degree panoramas, both cylindrical panoramas and spherical panoramas. Press **MENU** => ***Circular Panorama***. Same as the Matrix Panorama, the mount will move via one of eight (8) moving paths. After choosing a moving path, use the ▲ or ▼ button to set the upper point (include zenith) and bottom point (as low as the camera w/lens can go). The mount will calculate how many photos will be taken and if multiple paths are needed. The LCD will display the number of photos in each row and column the camera will take, and the total time it needs, based on the camera and mount settings.

The mount will ask if you want to preview the panorama. Press X to skip the preview or OK to preview. The mount will provide 5 positions for previewing: upper left corner, lower left corner, upper right corner, lower right corner and center position. Press OK to start taking photos. If the Check List is ON, the mount will ask a set of question to make sure that the camera is set correctly.

Here is an example to take a Circular Panorama from 20° up to -20° down.

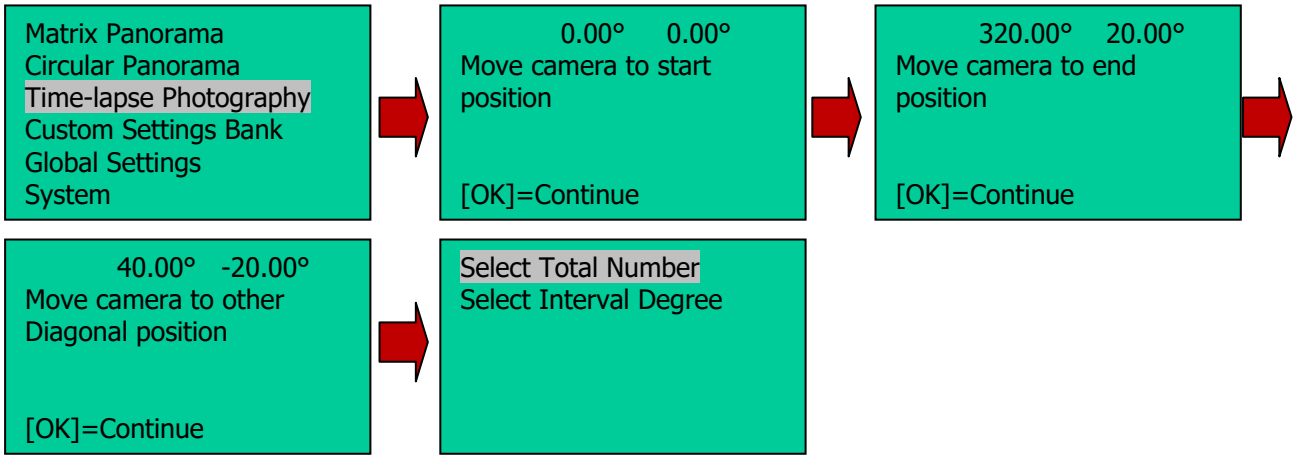


4.3. Time-lapse Photography

This Time-lapse Photography allows you to create time-lapse images while the camera is moving. You can pan, tilt or move diagonally the camera while taking the time-lapse images. You can set the delay between each picture you are taking. To take a time-lapse panorama (panoramas over a period of time,) please refer to ***Global Settings*** =>***Interval Timer***.

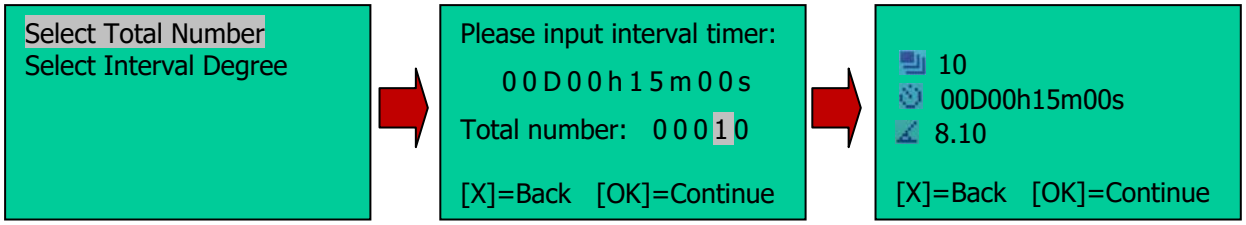
Press **MENU** => ***Time-laps Photography***. First move the camera to the staring position using the arrow key. Press OK to confirm. Then move the camera to the end position. Press OK. Now you can choose either total picture numbers or angle intervals for the whole swing.

Here is an example to take a Time-lapse photography from upper left corner (320°,20°) to lower right corner (40°,-20°)



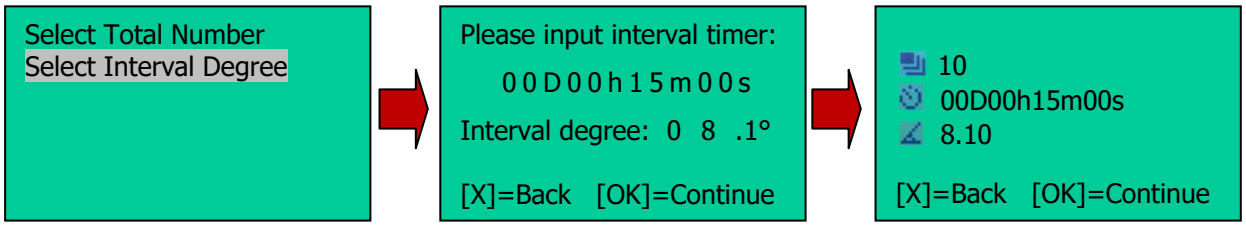
4.3.1. Total Number

Enter the time delays (*interval timer*) between each picture. Use the ◄ and ► buttons to switch between day, hour, minutes, and seconds. Use the ▲ and ▼ buttons to change the delay values where cursor is blinking. Move the cursor down to ***Total number*** line using ► button. Set the total pictures you want the camera to take with ▲ and ▼ buttons. Press OK to confirm. The mount will calculate the angle intervals between each shot, and display total shots, interval timer and interval degrees. Press OK to start.



4.3.2. Interval Degree

Enter the time delays between each picture. Use the ◄ and ► buttons to switch between day, hour, minutes, and seconds. Use the ▲ and ▼ buttons to change the delay values where cursor is blinking. Move the cursor to ***Interval Degree*** line and set the angle that camera will move between each picture taken. Press OK to confirm. The mount will calculate the total picture numbers. Press OK to start.



4.4. Customer Settings Bank

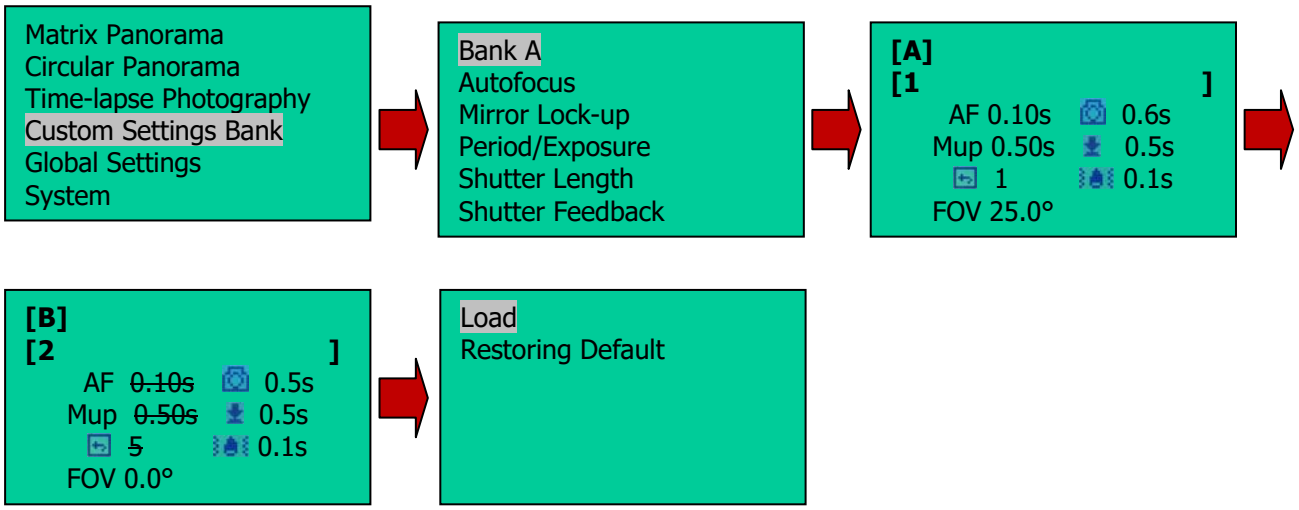
This function lets you store up to six (6) customized settings of parameters for a quick reload.

4.4.1. Bank

The 6 banks, numbered from **A** to **F**, are available for storing customized parameters. These parameters are AutoFocus (AF), Exposure, Mirror Lockup (Mup), Shutter Length, Repeat, Pretrigger Delay and Camera Field of View (FOV).

Select a Bank

The cursor will be in the first line when enter this sub-menu. This is the bank currently in use. Press OK button to enter next menu to choose a different bank. Use the ◄ and ► buttons to switch between bank **A** to bank **F**, and press OK. Now you can either ***Load*** the stored parameters or ***Restoring Default*** factory preset data (as shown in Bank **B** in following flow chart).

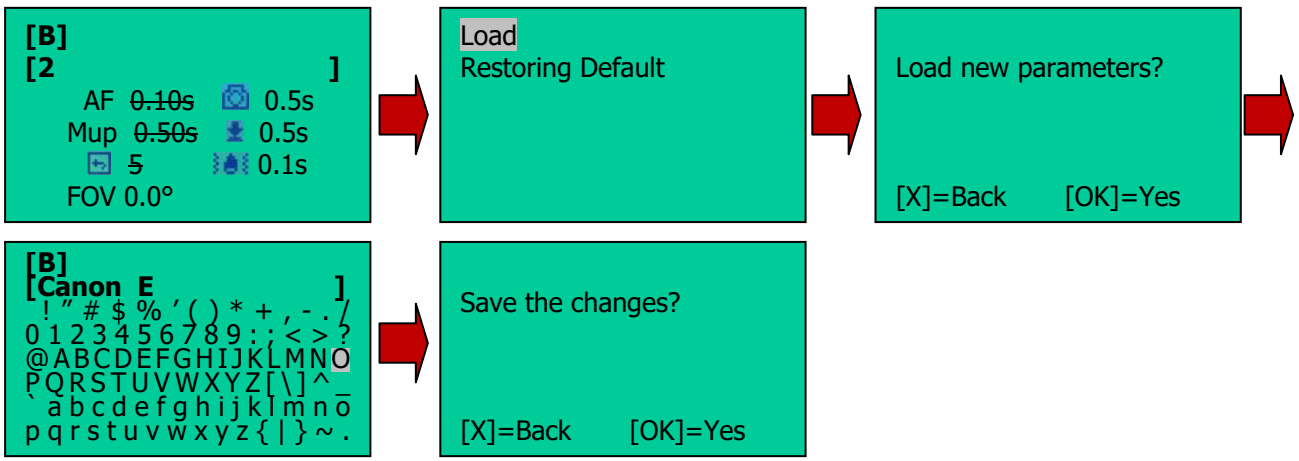


In bank **B**, the numbers with strikethrough indicates this function is OFF, such as AF ~~0.10s~~ means Autofocus is OFF.

Customize a Bank Title

To enter description of a customer bank, press ▼ button to move the cursor to title line (second line). Press OK button to bring up a soft keypad. Move the cursor and press OK to enter the letter/number/sign on the cursor position. Press and HOLD the OK key to finish the entering.

To delete a character, press and hold MENU button while move the ◄ or ► key to the character to be deleted. Release the MENU button and press the MENU button once to complete the deleting.

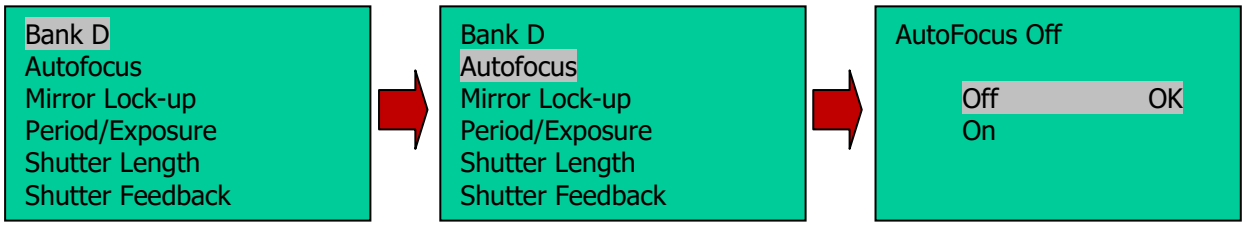


Press OK to save the changes.

- Here is the flow to record parameters to a specific bank, for example ***Bank D***. Use **MENU** => ***Custom Settings Bank*** => select ***Bank A*** (or the bank is currently in use) => **OK** => use arrow key to change it to ***[D]*** => **OK** => ***Load*** => **OK** to confirm.
- Press **X** button to go back to ***Bank D*** menu. Go to settings below.
- At the end of the setting, the parameter will be stored in the ***Bank D*** you selected and it will loaded automatically next time the mount is turned on, until you change the settings or load a different bank.

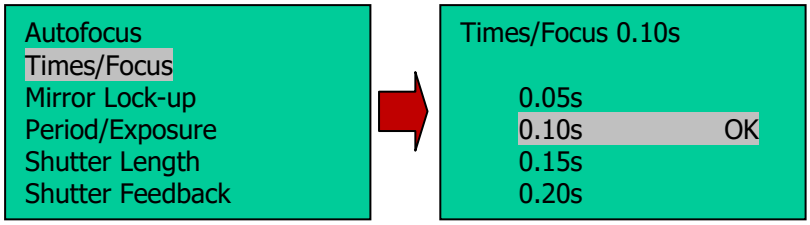
4.4.2. Autofocus

Turn the camera auto focus ON and OFF by moving the cursor and press **OK** button. Confirm saving the changes. The factory default setting is Off.



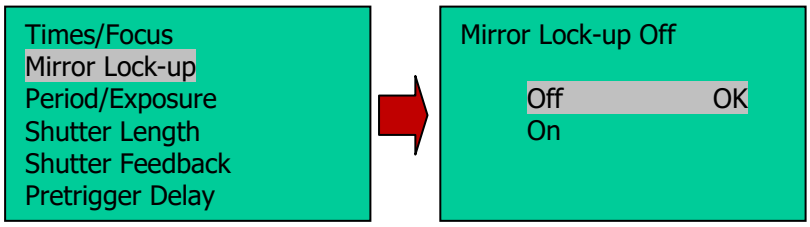
4.4.3. Time/Focus

When the ***Autofocus*** is turned ON, the ***Time/Focus*** submenu will be displayed. This function will set how long the camera will take to do the auto focus. The factory default setting is 0.10 seconds. The time can be set from 0.05 seconds to 1 second, with 0.05 seconds increments. Move the cursor to a desired number, press OK to select and confirm.



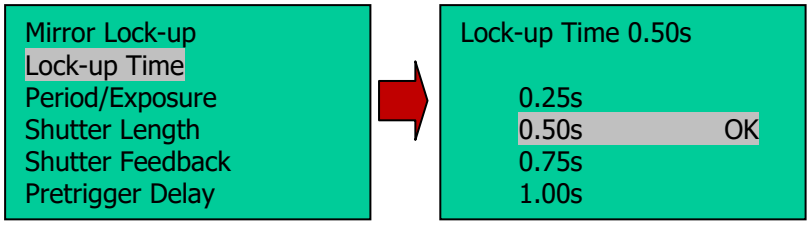
4.4.4. Mirror Lock-up

Turn the camera Mirror Lock-up function ON and OFF. The factory default setting is Off.



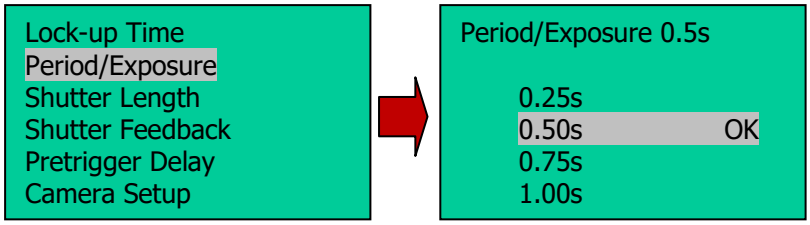
4.4.5. Lock-up Time

When ***Mirror Lock-up*** is set to ON, the ***Lock-up Time*** submenu will be displayed. This will allow you set how long the mirror will be flipped up and delayed before the shutter is triggered. The delay ranges from 0.25 seconds to 3 seconds with 0.25 seconds increments. The factory default setting is 0.50 seconds.



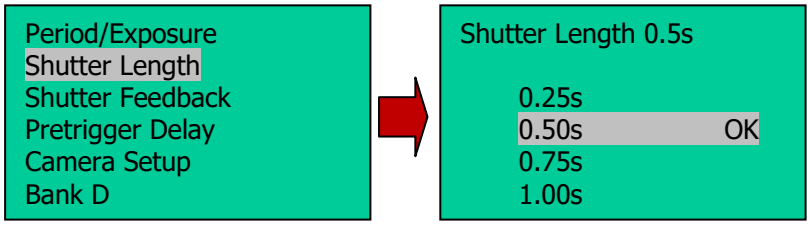
4.4.6. Period/Exposure

Set the total time between the start of the shutter triggering and the next mount movement. It can be set from 0.1s to 60s. The factory default setting is 0.5 seconds.



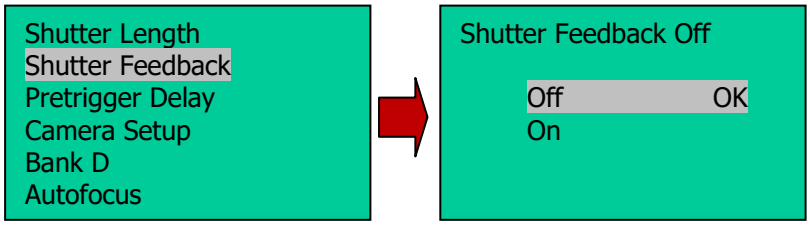
4.4.7. Shutter Length

The amount of time that shutter signal is asserted ranging from bulb (B), 0.1 to 8 seconds. The factory default setting is 0.5 seconds.



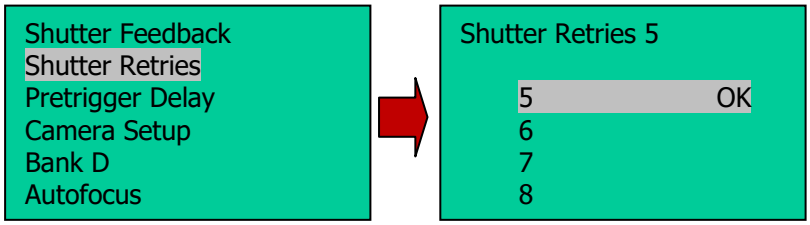
4.4.8. Shutter Feedback

This function is used to automatically detect a missed shutter trigger, hence a missed photograph at each position. The factory default setting is Off.



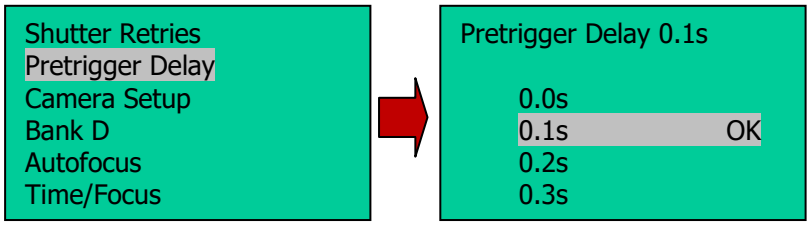
4.4.9. Shutter Retries

When the Shutter Feedback is turned ON, the ***Shutter Retries*** submenu will be displayed. This function will allow you to set how many times the camera will try to trig the shutter until it takes a photo successfully. It can be set to try from 1 to 10 times. The factory default setting is 5.



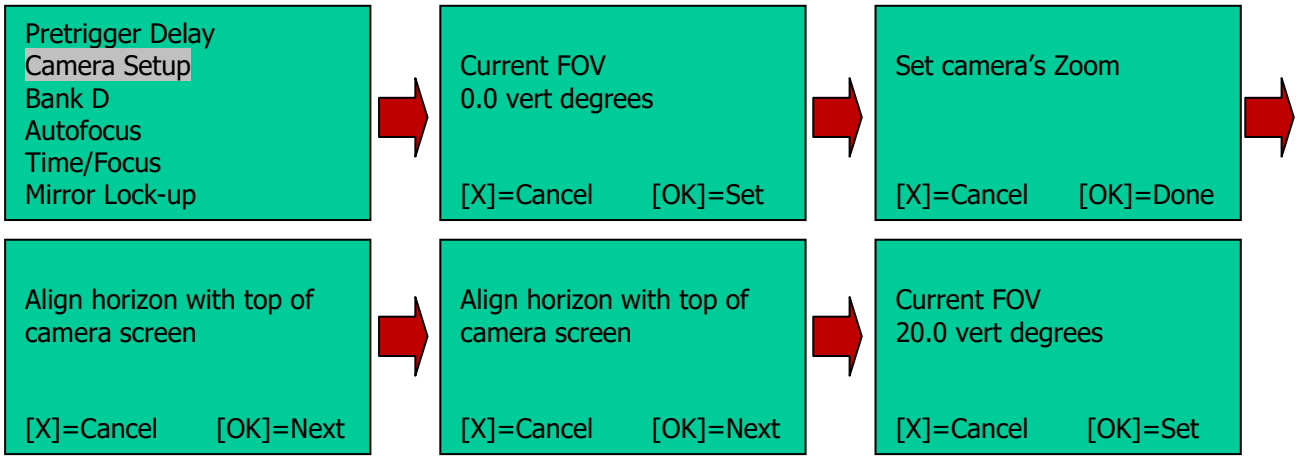
4.4.10. Pretrigger Delay

This delay is between the end of the mount movement and beginning of the trigger signal to your camera. It will allow the camera to settle after mount movement. The delay time can be set at 0.0s, 0.1s, 0.2s, 0.3s, 0.4s, 0.5s, 0.6s, 0.7s, 0.8s, 0.9s, 1.0s, 1.5s, 2.0s, 2.5s or 3 seconds. The default is 0.1s.



4.4.11. Camera Setup

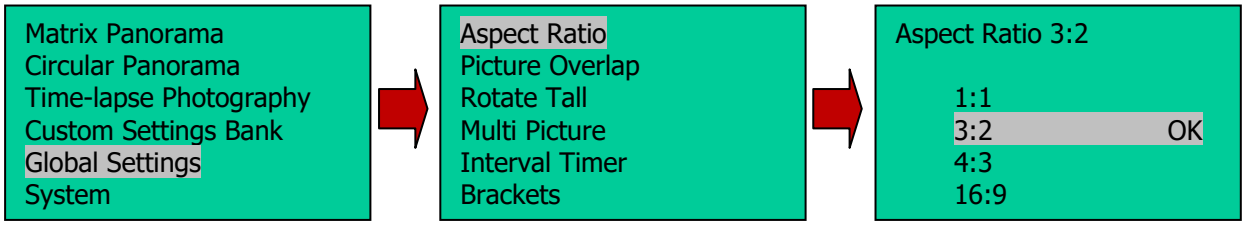
This will work through you to set the camera FOV. If you have a zoom lens, you need to set the zoom first. Follow the instruction on the screen to set up the camera FOV. Use ▼ key to tilt the camera downward until the top of view finder/display screen aligned with horizon, then press OK. Use ▲ key to tilt the camera upward until the bottom of view finder/display screen aligned with horizon, then press OK.



4.5. Global Settings

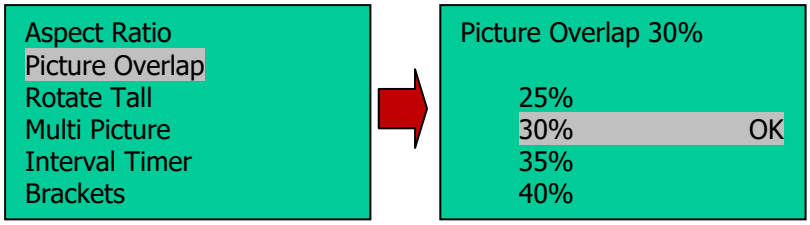
4.5.1. Aspect Ratio

Set the ratio of the width to height of the camera system. The default setting is 3:2. You may set the aspect ratio to 1:1, 3:2, 4:3 and 16:9, as well as customer values from 0.50:1 to 2:00:1.



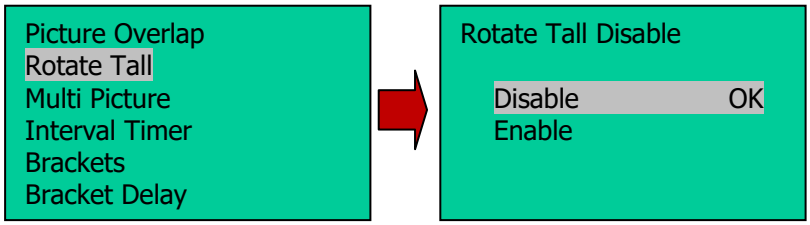
4.5.2. Picture Overlap

Set the overlap between each photos for panorama stitch. The overlap can be selected from 25% to 75%, with 5% increments. The default setting is 30%.



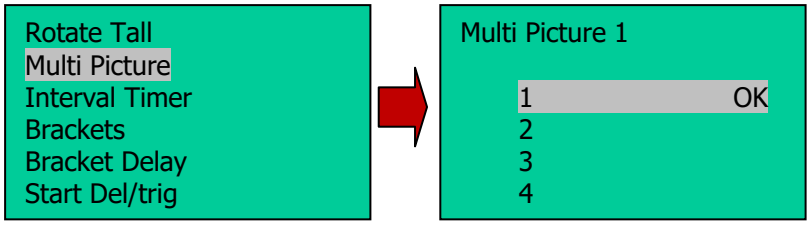
4.5.3. Rotate Tall

Choose take the photo in landscape (normal) or portrait orientation. The default setting is Disable (landscape). If you enable this function, make sure that the camera is mounted in vertical with the vertical mounting dovetail plate.



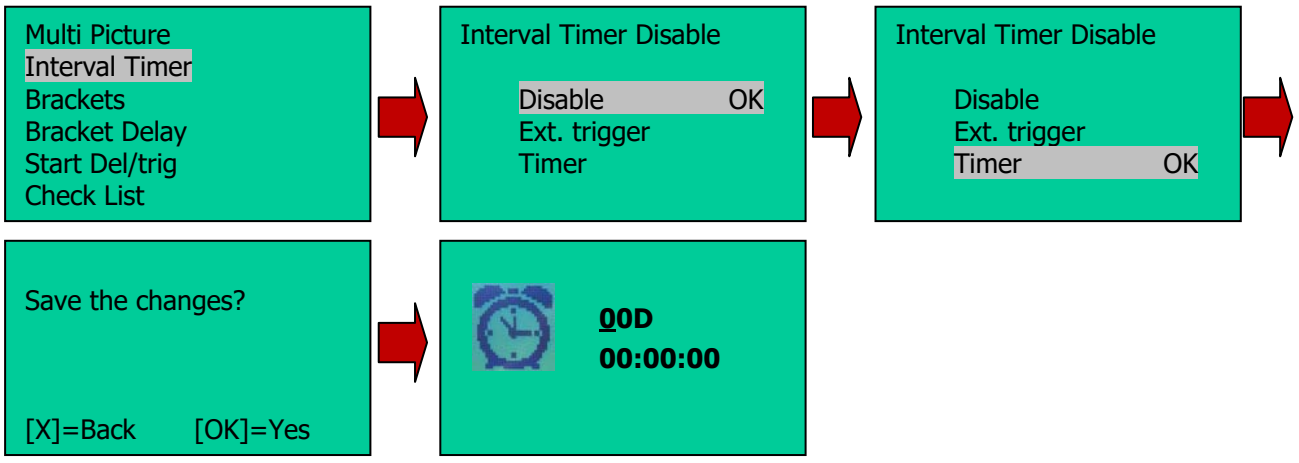
4.5.4. Multi Picture

This function will let you set the number of photographs that will be triggered per position, up to 20. The default is 1.



4.5.5. Interval Timer

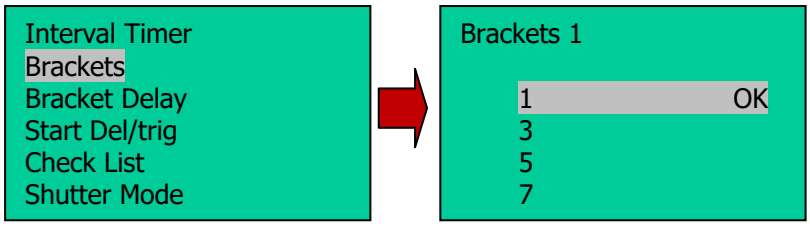
This will set the mount to take a series of panoramas over a period of time. If Disable is selected, the mount will stop at the end of a session. If Ext. Trigger is selected, the mount will wait for the remote signal to start the panorama again. If Timer is selected, you can enter how long the mount will wait until next session is started, until you stop the mount.



This function will take panorama time-lapse photos.

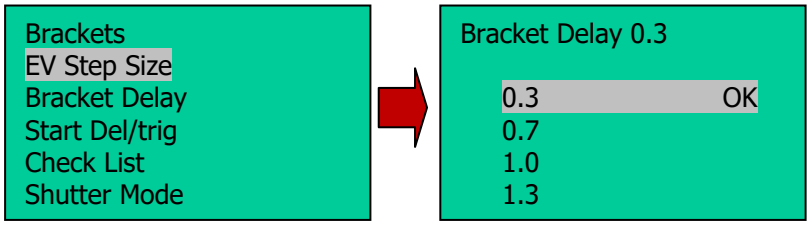
4.5.6. Brackets

Set exposure bracketing of 1, 3, 5, 7, or 9 photographs for HDR images by working with the camera AEB (automatic exposure bracketing) firmware. If the ***Bracket*** setting is more than 1, use the ***EV Step Size*** setting to set the separation of exposure values. The default bracket is 1.



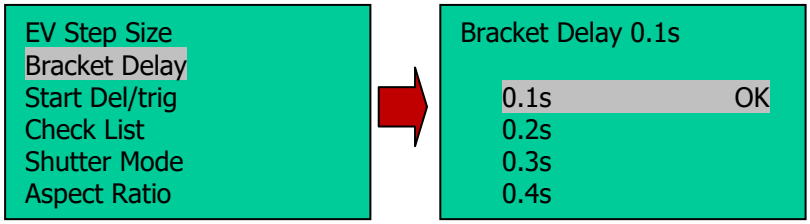
4.5.7. EV Step Size

Set the separation of exposure values (EVs) to 0.3, 0.7, 1.0, 1.3, 1.7 or 2.0.



4.5.8. Bracket Delay

Set time delay between Brackets to allow your camera enough time to transfer the images. The delay can be set between 0.1 and 8 seconds.

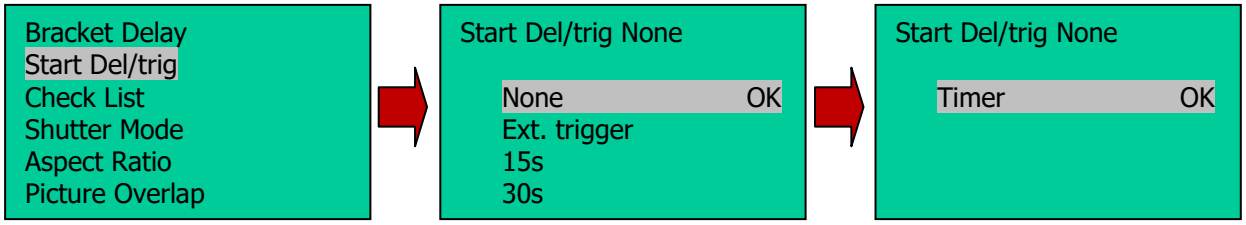


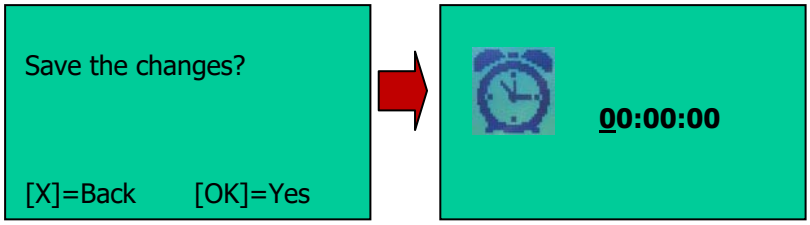
4.5.9. Start Del/Trig

This function tells mount when to start take the photo:

- ***None***: immediate after mount set up is done;
- ***Ext. trigger***: start when an external trigger signal is received;
- ***15s ~ 5m***: start the mount after 15s, 30s, 45s, 1m, 2m or 5 minutes delay;
- ***Timer***: star at a preset time (up to 24 hours).

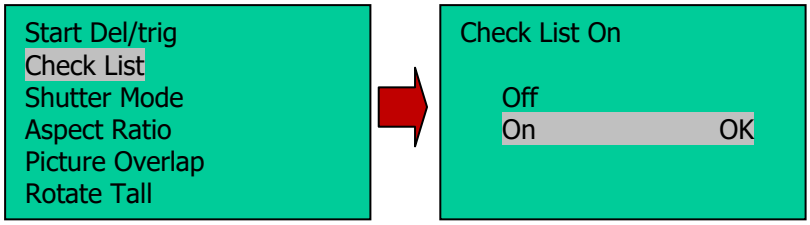
The default setting is ***None*** (no delay). To use the ***Timer***:





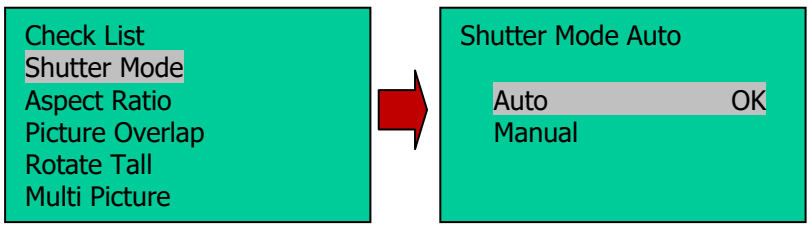
4.5.10. Check List

If ***Check List*** is selected, the mount will prompt you to check the camera based on your settings or which ***Custom Settings Bank*** is choosing before panorama capture begins. The default is On.



4.5.11. Shutter Mode

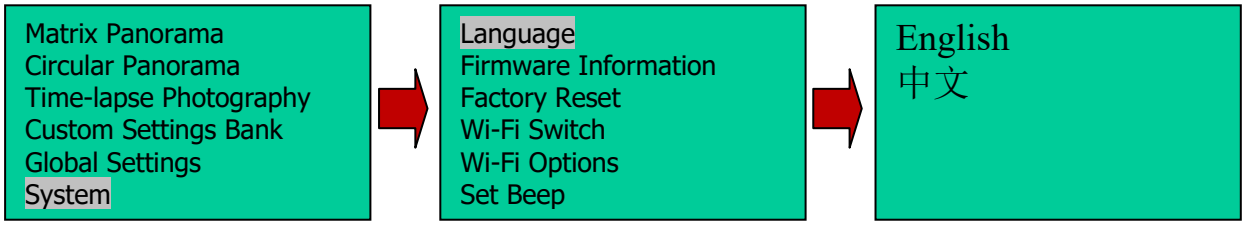
This function allows you to choose how the mount will operate the camera's shutter. If Remote is selected, the mount will trigger the shutter via the electronic trigger cable connected to the remote shutter port on the camera. If Manual is chosen, you'll need to manually actuate the camera shutter and press the OK button on the mount to advance to the next photograph. The default is ***Auto.***



4.6. System

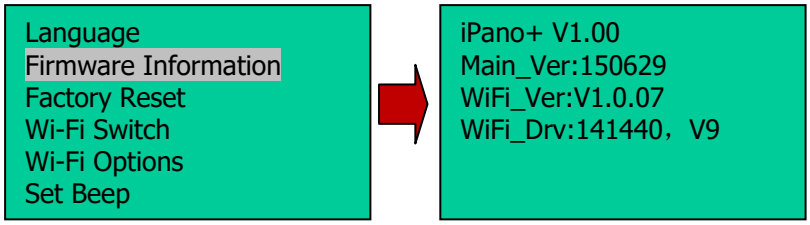
4.6.1. Language

Select system language. Currently it has English and Chinese (中文).



4.7. Firmware Information

Display system firmware version.

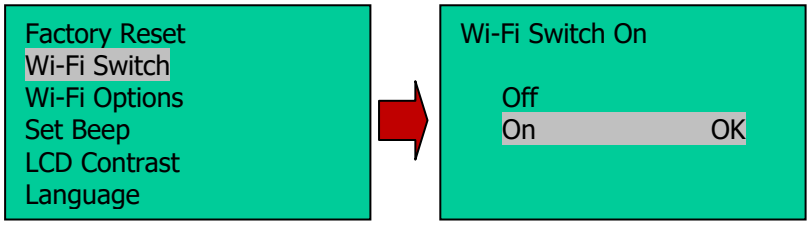


4.7.1. Factory Reset

Reset the system to factory default value and all the data will be lost.

4.7.2. Wi-Fi Switch

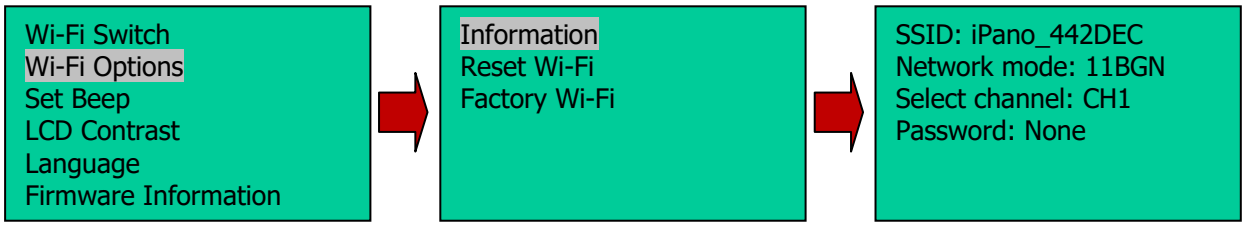
Turn ON/OFF built-in Wi-Fi module. When the Wi-Fi is turned on (default setting), the iPano mount will broadcast itself with a Wi-Fi SSID iPano_XXXXXX (can be customized). It can be discovered by and connected to a Computer/Tablet/SmartPhone and be controlled wirelessly with a proper software/App.



4.7.3. Wi-Fi Option

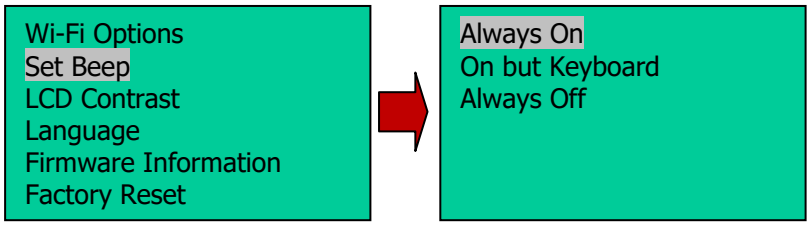
This option will display current Wi-Fi module information and restart/reset the WI-Fi adapter.

- ***Information***: display the basic information of the Wi-Fi module. It can be changed through a computer via RS232 port.
- ***Reset Wi-Fi***: restart the Wi-Fi module.
- ***Factory WI-Fi***: reset all the Wi-Fi information and settings to factory default. Customized SSID or password will be lost.



4.7.4. Set Beep

Set when the mount will beep.



4.7.5. LCD Contrast

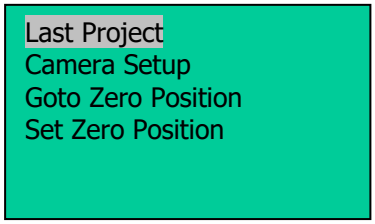
Adjust LCD display contrast using ◄ or ► button.

4.8. Camera Parameter

For storing your camera and lens' basic parameters, such as Center Position, Camera Height, Entry Pupil Positions for the camera and lens.

4.9. Short Cut Key

Hold the MENU button will bring up the Short cut Key menu.



4.9.1. Latest Project

Select this one if you want to repeat the last panorama project.

4.9.2. Camera Setup

Set up the camera zoom and FOV for the current project while keep other settings the same.

4.9.3. Goto Zero Position

Send the mount back to zero position, the initial pointing direction.

4.9.4. Set Zero Position

Set the current position as mount's zero position. Use this function after you set up and level the mount to reset the mount initial pointing coordinate to (0,0).

5. iPano AllView Mount Remote Control

A PC computer may be used to setup and control an iPano AllView Pro mount via iPano Commander. The iPano mount can be connected to a PC via a serial cable or wirelessly.

An iPano mount can also be controlled by an iOS version iPano Commander.

5.1. Connect the mount to a computer via a serial cable

If the computer has a 9-pin, D-shape male serial port (i.e, COM port or RS232 port), connect the supplied serial cable between the computer RS232 port and the mount RS232 port.

Figure 16. Native serial (RS232) port

If the computer only has USB ports, like most laptops do, a USB to COM converter is needed to convert one USB port to a COM port. Here are two examples of USB2COM converters. iOptron suggests you to acquire one with FTDI chipset.

Figure 17. USB-RS232 converters

Follow the instruction comes with the converter to install the driver. Plug the converter into one of the available USB port of the computer. Then connect the serial cable between the RS232 ports of the converter and the mount (Figure 18).

Figure 18. Connect RJ-9 cable to mount

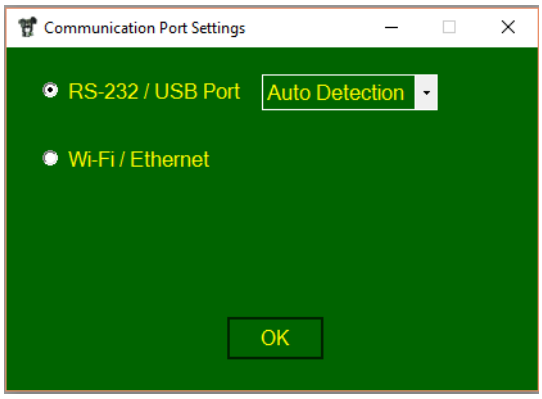


Figure 19. iPano Commander Port Settings

Download and install iPano Commander. When a Communication Port Settings screen is opened on your computer screen, select RS232/USB Port, click OK to connect the mount to the computer.

5.2. Connect the mount to a computer via a Wi-Fi connection

The iPano mount has a built-in Wi-Fi connection. Open the Wi-Fi connection panel on your computer. Find a Wi-Fi SSID called “iPano_XXXXXX”, as shown below and connect it.

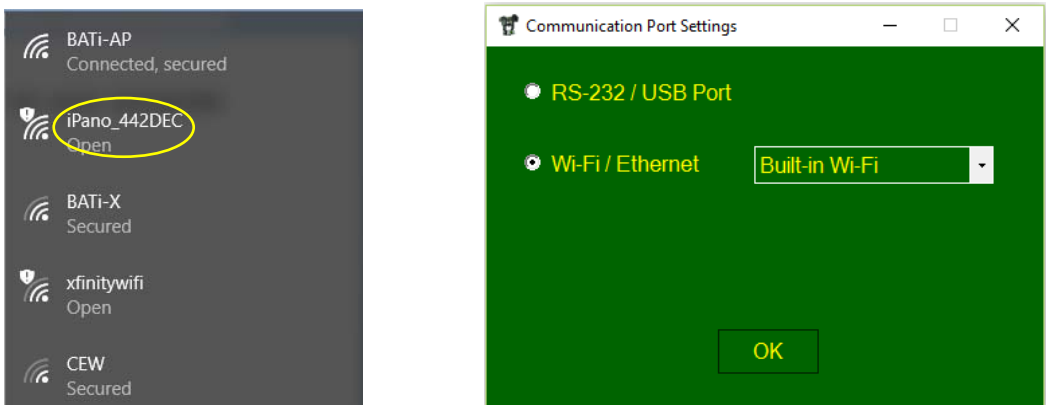


Figure 20. Wi-Fi connection

5.3. iPano Commander

After the mount is connected, iPano Commander will be loaded. Now you can set the parameter on your computer. Some parameter changes need select ***Change Setting*** button first before any change can be made.

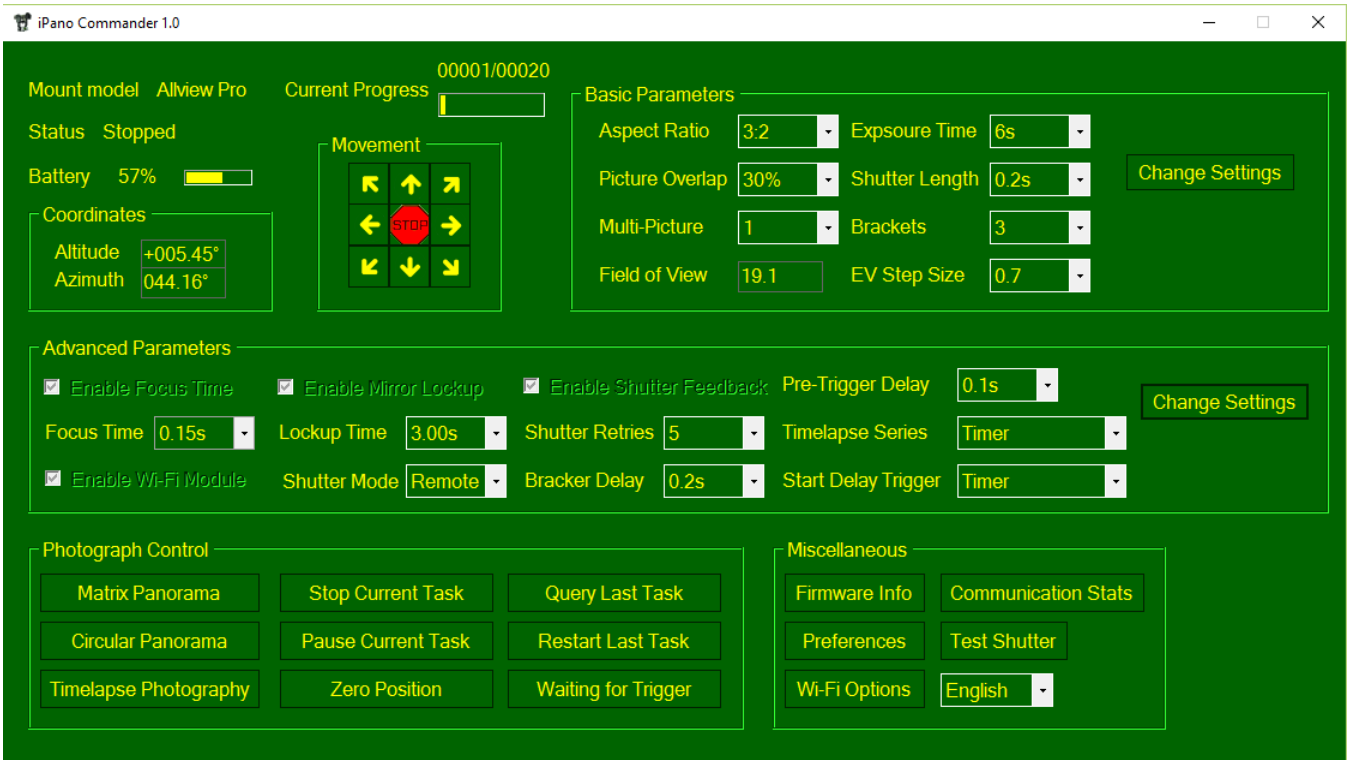


Figure 21. iPano Commander Interface

5.4. Connect a iPad/iPhone to a iPano mount Wi-Fi Connection

- Download iPano Commader App from iTune store first (https://itunes.apple.com/us/app/ipano-commander/id1058694402?mt=8).

- Connect the iPad/iPhone to the iPano_XXXXXX wireless network. Tap iPano Commander on your iPad/iPhone.
- Now you make your iPad/iPhone a iPano remote controller. Watch the demo on YouTube

  iOS iPano Commander Demo

Figure 22. iPad/iPhone Wi-Fi connection

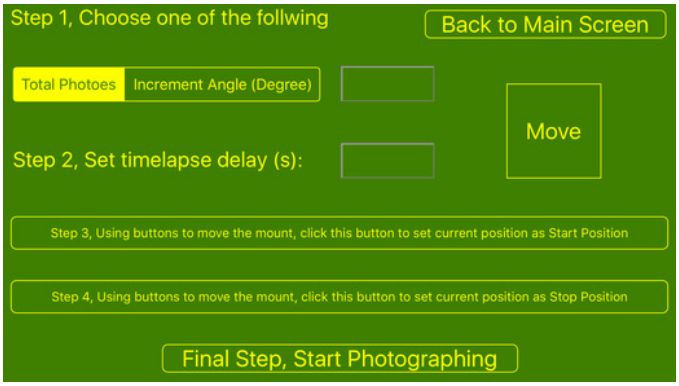


Figure 23. iOS iPano Commander interface

6. Image Processing

The processing software, Panoweaver 9 Standard Edition by Easypano is included. It can be download from Easypano website (http://www.easypano.com/download-panorama-software.html). You may refer to the software website for more detailed information, including Video Tutorial and Online User Manual.

You may also use other stitching programs you are already familiar with, such as PTGui and Autopano. There are also free options from Hugin and Microsoft ICE.

Then you can share or publish your panoramas online. If you're adding 360 panos to your website or blog, Pano2VR, krpano, and PanoTour are interactive panorama viewers that offer lots of options. Or a simpler way to get your 360 panoramas online is to use 360Cities or Google Maps.

7. Wi-Fi Configuration

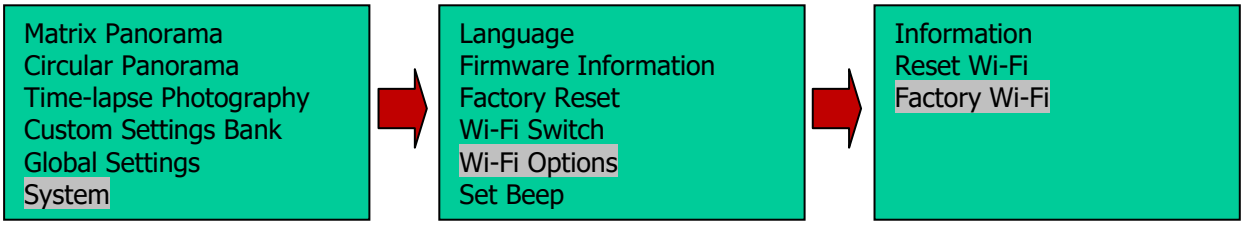
The iPano Wi-Fi is shipped with no password protection. You can change the SSID and enable password protection so only you can make the connection.

To change the Wi-Fi settings:

- Connect the computer/tablet/SmartPhone to iPano Wi-Fi;
- Open the internet browser and type in http://10.10.100.254**;**
- A login window will open. Enter "**admin**" as both **User Name** and **Password**;
- Go to AP Settings;
- Now you can change the SSID name from iPano_XXXXXX to Your Name, enable WPA2 encryption, etc.;
- You may also go to account to change login name and password;
- Restart the mount.

Note:

1. Please keep the Wi-Fi at AP (access point) mode
2. If ever you forgot your password, use "***Factory Wi-Fi"*** to reset the WI-FI to factory default settings.



8. Maintenance and Servicing

8.1. Maintenance

The iPano AllView Pro mount is designed to be maintenance free. Do not overload the mount. Do not drop the mount as this will damage the mount and / or permanently degrade performance. Use a wet cloth to clean the mount and hand controller. Do not use solvent.

Charge the battery regularly if the mount is not in use for a period of time. Replacement battery is available.

8.2. iOptron Customer Service

If you have any question concerning your mount contact iOptron Customer Service Department. Customer Service hours are 9:00 AM to 5:00 PM, Eastern Time, Monday through Friday. In the unlikely event that the mount requires factory servicing or repairing, write or call iOptron Customer Service Department first to receive an Return Merchandise Authorization Number (RMA#) before returning the mount to the factory. Please provide details as to the nature of the problem as well as your name, address, e-mail address, purchase information and daytime telephone number. We have found that most problems can be resolved by e-mails or telephone calls. So please contact iOptron first to avoid returning the mount for repair.

It is strongly suggested that to send technical questions to support@ioptron.com. Call in the U.S. 1.781.569.0200.

8.3. Product End of Life Disposal Instructions

This electronic product is subject to disposal and recycling regulations that vary by country and region. It is your responsibility to recycle your electronic equipment per your local environmental laws and regulations to ensure that it will be recycled in a manner that protects human health and the environment. To find out where you can drop off your waste equipment for recycling, please contact your local waste recycle/disposal service or the product representative.

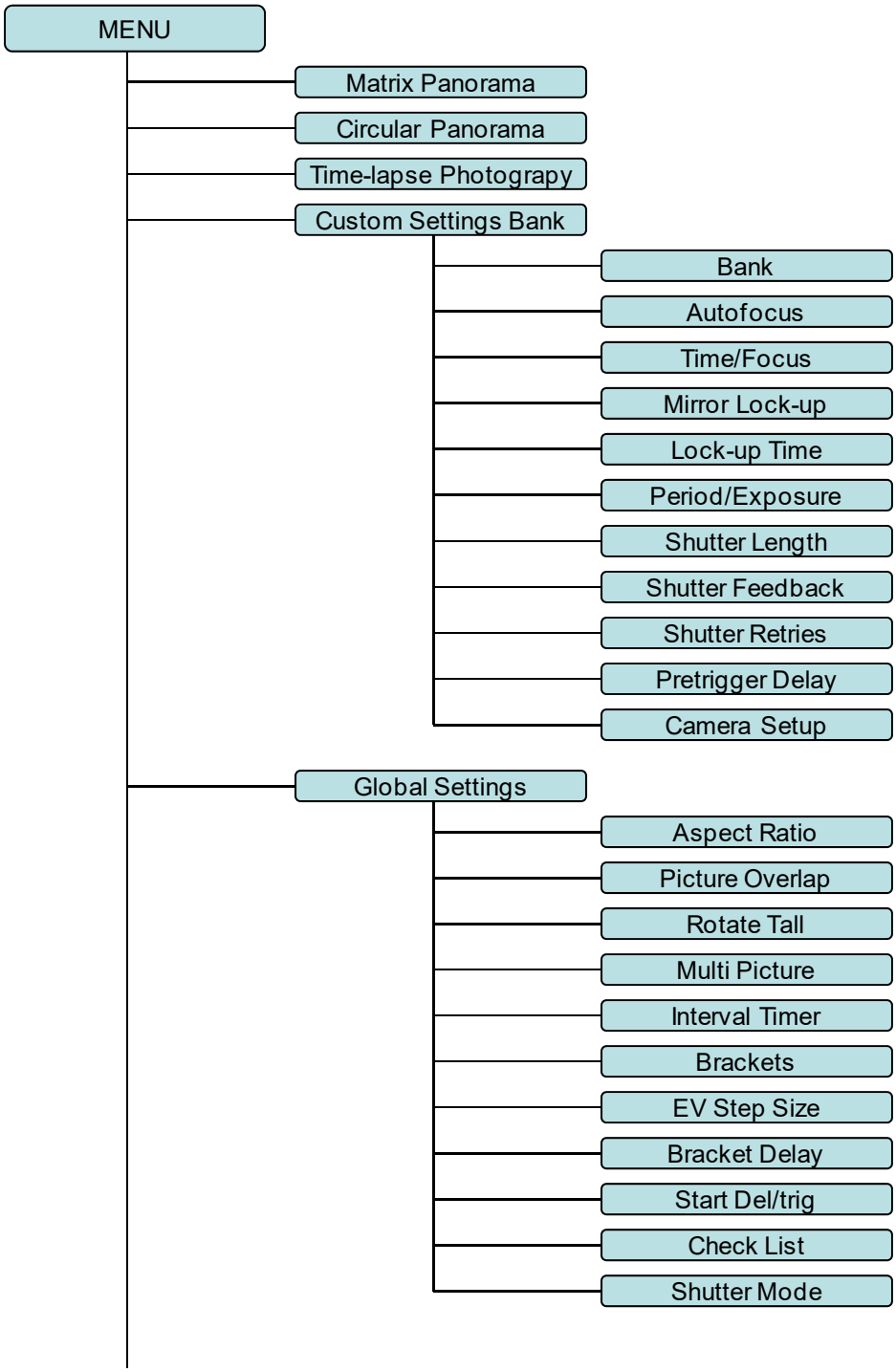
8.4. Battery Replacement and Disposal Instructions

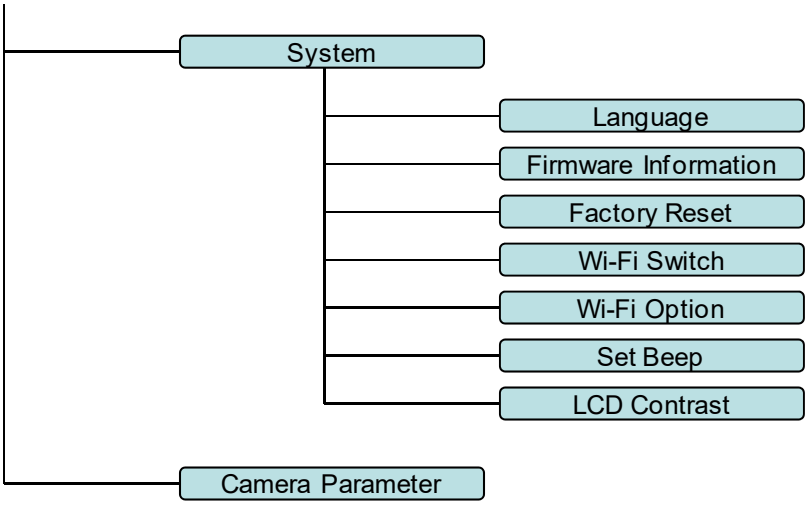
Battery Disposal: Batteries contain chemicals that, if released, may affect the environment and human health. Batteries should be collected separately for recycling, and recycled at a local hazardous material disposal location adhering to your country and local government regulations. To find out where you can drop off your waste battery for recycling, please contact your local waste disposal service or the product representative.

Appendix A. Technical Specifications

Mount	iPano AllVtew Pro Camera Mount
Operation Mode	Panorama/Turntable
Mount Structure	U-shaped, double-arm, all enclosed
Frame material	Aluminum alloy
Payload	Panorama – 5kg (11 lbs) Turntable – 10kg (22 lbs)
Weight	3.3kg (7.3 lbs, including battery)
Size	20.3 X 28 X 13.3 cm (12 X 11 X 5.25 in.)
Fitted Camera	Lens center to camera bottom < 80 mm (3.15 in.) – most DSLR
Camera Mounting	Horizontal/vertical
Motor	Stepper motors
Drive Train	Metal worm/gear with synchronize belt
Motion	Concurrent biaxial, no backlash, no play, no vibration
Motion Range	Pan: 360°, Tilt: +90° to -90° (camera lens may block)
Motion Increment	0.0001° per step
Pan-tilt Precision	0.01°
Maximum slew speed	Pan: 15°/sec, Tilt: 8°/sec
Battery	Built-in rechargeable Li-ion battery (7.4V, 4.4AH, 32.6WH)
Operation time	Continuous 50,000 shots (at 1 shot/sec rate)
Battery charger	100-240V AC input /8.4V DC 2000mA output (Included)
Control Display	128 X 64 pixel LCD
Electronic Trigger Cables	Canon N3; Canon E3; Nikon 10 Pin; Nikon MC–DC1; Nikon MC–DC2; Olympus RM-UC1 and Sony RM-S1AM
Remote Trigger Interface	2.5mm three-contact TRS socket (earphone jacket)
Wireless Communication	Full Wi-Fi control via iPano Commander
I/O Port	Full control via RS232 command set or iPano Commander (RS485 for future application)
Firmware upgrade	User upgradable
Padded Carrying Bag	Included
Operation temperature	-10ºC ~ 40ºC
Warranty	Mount: one year limited Battery: 90 day limited

Appendix B. iPano™ AllView Pro™ Camera Mount MENU




System
Language
Firmware Information
Factory Reset
Wi-Fi Switch
Wi-Fi Option
Set Beep
LCD Contrast
Camera Parameter

Appendix C. Firmware Upgrade

The firmware in iPano AllView Pro can be upgraded by the customer. Please check iOptron's website, http://www.iOptron.com, under ***Support > Firmware/Software*** for details.

Appendix D. Supported Camera

There are 7 camera shutter tripper cables are included in an iPano mount. An optional Sony S2 cable (#3610-08) is also available on www.ioptron.com.

Canon E3 trigger cable (#3610-01) 	**Canon:** 60D, 70D, All 'Rebels' (100D, 300D, 350D, 400D, 450D, 500D, 550D, 600D, 650D, 700D, 1000D, 1100D, etc), T5i, T4i, T3i, T3, T2i,T1i, TXi, XTi, SL1, Kiss, SX50, G10, G11, G12, G15, G16, G1X **Pentax**: K3, K5, K7, K30, K50, K500, K100D, K110D, K10D, K200, K20D, K5 II, K5 IIs, *ist D, *ist DL, *ist Ds, *ist DS2, *ist DL2, **Samsung:** GX-1L, GX-1S, GX-10, GX-20, NX5, NX10, NX100.
Canon N3 trigger cable (#3610-02) 	**Canon:** EOS: 1D series, 5D series, 7D, 50D, 40D. 30D, 20D, 10D. (Compatible with the device under shutter release mode)
Nikon DC-MC1 trigger cable (#3610-03) 	**Nikon:** DSLR D80 and D70

Nikon DC-MC2 trigger cable (#3610-04) 	**Nikon:** D90, D3100, D3200, D3300, D5000, D5100, D5200, D5300, D5500, D7000, D7100, D7200, D600, D610, D750
Nikon 10-pin trigger cable (#3610-05) 	**Nikon:** D1, D1H, D1X, D2, D200, D2H, D2Hs, D2X, D2Xs, D3, D300, D300s, D3s, D3x, D4, D4s, D700, D800, D800e and D810 **Fuji:** S3 and S5 **Kodak:** DCS-14N
Olympus RM-UC1 trigger cable (#3610-06) 	**Olympus:** Olympus SP-510UZ, SP-550UZ, SP-560UZ, SP-5655Z, SP-570UZ, SP-590 UZ and SZ-30MR, SZ-31MR his, XZ-1, XZ-10, SP-100EE, OM-D E-M5, OM-D E-M5 Mark II Digital Camera Olympus PEN E-P1, E-P2, E-P5, E-PL2, E-PL3, E-PL5, E-PL6, E-PL7, E-PM1, E-PM2 Digital Camera Olympus Evolt E410, E-420, E-450, E-510, E-520, E-600, E-620, E-30 Digital SLR Camera

Sony RM-S1AM trigger cable (#3610-07) 	**Sony:** Alpha DSLR-A100 A200 A300 A350 A450 A500 A550 A560 A580, A700 A900 Alpha SLT-A77, SLT-A65, SLT-A55, SLT-A35, SLT-A33, **Minolta:** Maxxum/Dynax/AF 7D, 5D, 9, 7, 5, 4, 3, 807si, 800si, 700si, 600si, 505si, 500si, 9000, 7000, 5000 DiMAGE 7Hi, 7i, 7, 5, A1, A2, A200
Optional Sony S2 trigger cable (#3610-08) 	**Sony:** Alpha A7 / A7R / A7S / A3000 / A5000 / A6000 SLT-A58 NEX-3NL DSC-HX300 / HX50V, DSC-RX100II, DSC-RX100III

IOPTRON WARRANTY

1. **iOptron battery has 90 day limited warranty**
2. **iPano™ AllView Pro™ mount has one year limited warranty**

A. iOptron warrants your iPano™ AllView Pro™ camera mount to be free from defects in materials and workmanship for one year from date of the purchase. iOptron will repair or replace such product or part which, upon inspection by iOptron, is found to be defective in materials or workmanship. As a condition to the obligation of iOptron to repair or replace such product, the product must be returned to iOptron together with a proof-of-purchase satisfactory to iOptron.

B. A proper Return Merchant Authorization Number must be obtained from iOptron in advance of return. Call iOptron at 1.781.569.0200 or contact iOptron at support@ioptron.com via e-mail to receive the RMA number to be displayed on the outside of your shipping container.

All returns must be accompanied by a written statement stating the name, address, and daytime telephone number of the owner, together with a brief description of any claimed defects. Parts or product for which replacement is made shall become the property of iOptron.

The customer shall be responsible for all costs of transportation and insurance, both to and from the factory of iOptron, and shall be required to prepay such costs.

iOptron shall use reasonable efforts to repair or replace a mount covered by this warranty within thirty days of receipt. In the event repair or replacement shall require more than thirty days, iOptron shall notify the customer accordingly. iOptron reserves the right to replace any product which has been discontinued from its product line with a new product of comparable value and function.

This warranty shall be void and of no force of effect in the event a covered product has been modified in design or function, or subjected to abuse, misuse, mishandling or unauthorized repair. Further, product malfunction or deterioration due to normal wear is not covered by this warranty.

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Some states do not allow the exclusion or limitation of incidental or consequential damages or limitation on how long an implied warranty lasts, so the above limitations and exclusions may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

iOptron reserves the right to modify or discontinue, without prior notice to you, any model or style mount.

If warranty problems arise, or if you need assistance in using your mount contact:

iOptron Corporation
Customer Service Department
6E Gill Street
Woburn, MA 01801
www.ioptron.com
support@ioptron.com
Tel. (781)569-0200
Fax. (781)935-2860
Monday-Friday 9AM-5PM EST

NOTE: This warranty is valid to U.S.A. and Canadian customers who have purchased this product from an authorized iOptron dealer in the U.S.A. or Canada or directly from iOptron. Warranty outside the U.S.A. and Canada is valid only to customers who purchased from an iOptron Distributor or Authorized iOptron Dealer in the specific country. Please contact them for any warranty.