Kolor

PANOGEAR

User manual

1. General description

- Motorized Panoramic Head

The Motorized Panoramic Head has the necessary motorization to put the camera in motion and control picture taking. A 3/8" threaded base is included on the head that can easily be attached to the grand majority of commercial tripods. The base's top compartment holds the batteries. The motorized head can be powered in three different ways: eight AA batteries, two LSM-160 batteries, or with an external 12V power supply.

⚠ **You should never use in same time both internal and external power supply!**

On the medial section of the base, you will find (in order):

✓ An RJ-11 jack labeled "HC": which connects the original controller.

✓ An RJ-11 jack labeled "AUX": which connects the Bluetooth transmitter/ receiver and the touch control panel.

✓ The "on/off" switch: for the head and the connected periphery materials.

On the external top compartment of the motorized head, you will find (in order):

✓ A jack labeled "Snap": which connects the camera's trigger cable.

✓ A jack labeled "IN": which connects a 12V DC power supply for the head.

✓ A jack labeled "OUT": which connects a 12V DC power supply to an external device connected to the head.

A straight bracket or an L-bracket can be connected to the fastening crown to attach the camera.

- Straight Bracket and L-Bracket

Robust and easy-to-use, the straight bracket can be used directly on the attachment zone or can be connected to the provided. Equipped with a millimeter ruler to aid with attachment and placement. The L-Bracket included in your pack is essential when using a long focal length. The L-bracket permits you to use your camera in landscape mode on the motorized head.

- Power supply

In your pack you will find a set of necessary ion battery components to supply power to the head. These ion batteries can be used in place of those previously mentioned allowing you to have greater autonomy. The power kit includes: two 7.4V batteries, a battery connector, and two universal chargers.

- Touch control panel

The touch control panel permits independent and intuitive control of your motorized head. Containing a large internal memory, you are able to program sessions ahead of time on your computer and then launch them on the spot, or to store your already conducted scenarios which can be reused in the future. Thanks to this system, you are able to repeat a session an infinite amount of times in a simple and precise manner, or you can store your favorite shooting templates to save time when out in the field.

⚠ **Included is a settings software that runs exclusively with Windows.**

- Bluetooth transmitter/receiver

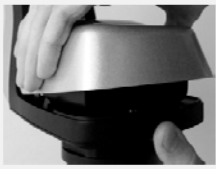
The Bluetooth transmitter/receiver allows you to control the motorized head wirelessly from the Papywizard software installed on a computer, or compatible device, equipped with a Bluetooth interface.

- Papywizard/ Panorama software

The latest version of Papywizard (the app driving the Panogear head via bluetooth) and Panorama (the app for the optional touch control panel) is also available online on our website (www.kolor.com).

2. Installation

Screw your motorized head to the tripod. Remove the motor's protective cover, located next to the level. To do so, press the black button located under the front of the cover. Pull gently up and then out on the cover.



Once the cover is removed, take out the two AA battery compartments. Insert your battery connector in place of the AA battery compartment. Make sure to clip them in.

While inserting the connector, you may need to apply a bit of pressure to give it a slightly curved shape.

Insert the ion batteries under the battery contacts; make sure to keep the ion batteries spread apart. Put the cover back on by pushing again on the black button to secure it in place.

Fasten your camera on the straight or L-bracket. Insert the straight or L-bracket into the crown of your motorized head and adjust it as shown in the adjacent image.

Attach the straight bracket to the L-bracket using the fixation screw. Certain lenses and telephoto lenses include a tripod attachment. Attached it directly on the straight bracket to benefit from an enhanced stability.

Use the trigger cable from the pack to connect your camera to the motorized head. To do so, connect one end of the cable to the head's SNAP jack and the other to your camera's "Remote" jack then connect your touch control panel or Bluetooth transmitter/receiver on the "AUX" jack.

⚠ **Do not use simultaneously several piloting modes.**

- Driving option n°1: Touch Control Panel

Connect the controller to your computer using your mini-USB cable. Your controller displays "USB;" but the screen does not light up. If you have not downloaded the touch control panel "Panorama" app, download it from our download page on our website (www.kolor.com). Once downloaded, launch the installation by clicking on the file named "setup.exe" and follow the instructions until the end of the installation process.

You must have the Microsoft .Net 2.0 extension or higher to be able to install the software. If you receive an error message, download and install the extension for free from the Microsoft website: www.microsoft.com/downloads.

- Driving option n°2: Papywizard (Bluetooth)

⚠ **The protective cover of your motorized head must be on.**

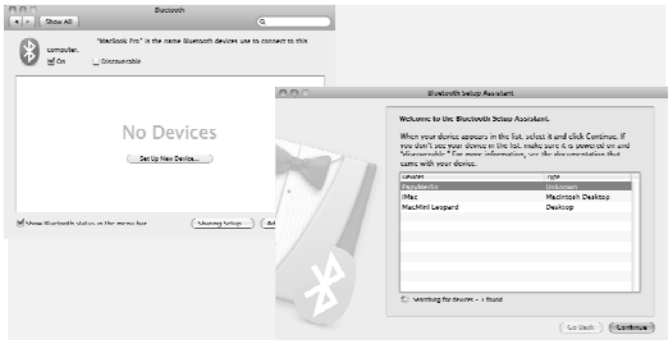
With the Bluetooth transmitter/receiver, you can control the motorized head wirelessly with the Papywizard software. This software functions with Windows, Mac (Mac OS X 10.8 Mountain Lion not supported), and Linux.

Install "Papywizard" by following the installation process. Connect your Bluetooth transmitter/receiver to the AUX jack on the motorized head then turn it on. (Once connected, the receiver should begin to blink). You can now set your Bluetooth connection:

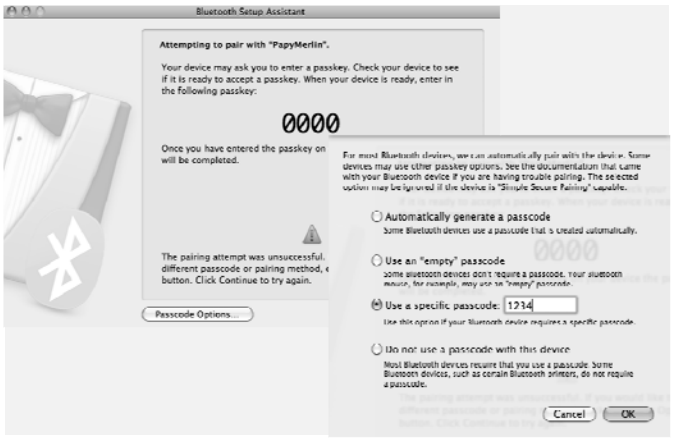
- Mac OSX

Click on “System preferences” in the “Apple” menu or click on “Applications” -> “Utilities” then click on the Bluetooth icon (if the icon does not appear, that means that the Mac is not supporting Bluetooth. In this case, plug the provided Bluetooth dongle on a USB port and restart).

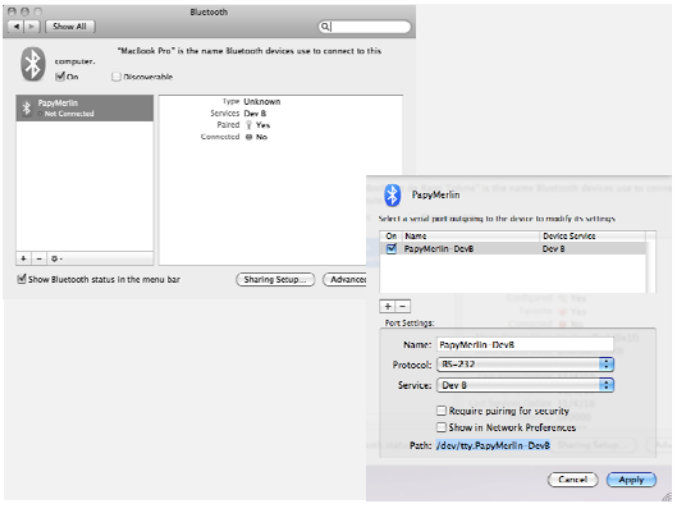
A window appears. Check “On”, do not check “Discoverable” then click on “Set Up New Device…”. A window appears. Wait for the text “PapyMerlin” to appear. Select “PapyMerlin” then click on “Continue”.



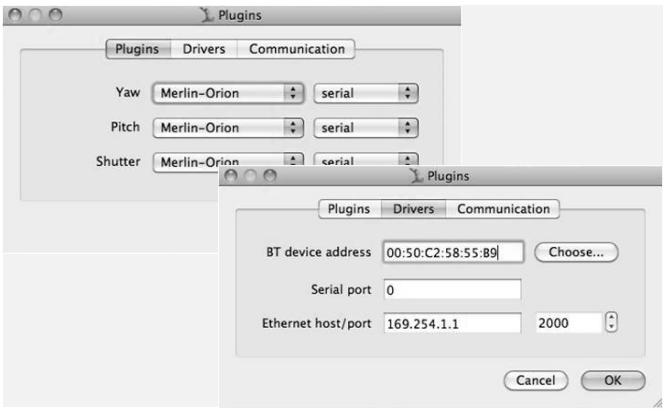
On the error message which appears, click on “Passcode Options…” then choose: “Use a specific passcode” and indicate “1234”. Click on “OK”. A window appears indicating the success of the operation, close the window.



On the main “Bluetooth” window, select the text “Papymerlin” then click on the small wheel and choose “Show more information”. Click again then choose “add to favorites”. Click again then choose “Edit Serial Ports”. Select then copy the text highlighted in blue on the screen shot (CMD+ C). Cancel the window then close all.



Start Papywizard. Click on “Hardware” -> “Plugins”. Select “Merlin-Orion” ->”serial”. Click on “Drivers”; paste the previously copied text (CMD + V) in “Serial port”. Do not check “Auto-connect”. Click on “OK” to validate then click on « Connect » in the main menu. Wait a while.



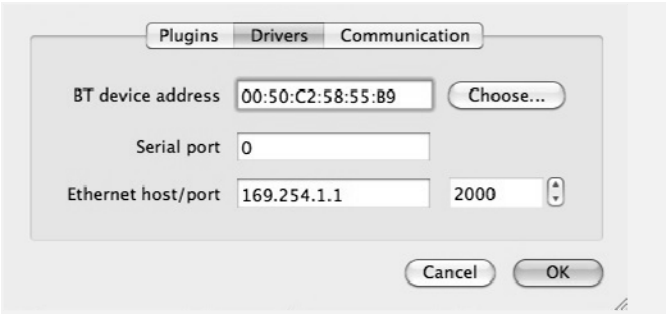
- Windows

Plug the USB Bluetooth dongle on your computer. Open Papywizard. You will find the configuration dialog on Papywizard's main screen. Here you can access the application settings.

For now, we are going to focus on the "Hardware" tab. Click on hardware, then choose in the sub-tab: “Plugins…” A window appears. Choose Merlin-Orion/ bluetooth as shown on the picture then click on “Drivers”.

⚠ **We strongly recommend not to check the "Automatic connection" option to avoid Papywizard start up to be blocked due to the absence of a Bluetooth transmitter/receiver.**

Click on choose... A window appears. Select your Bluetooth interface from the suggested list then click on OK. Click on OK again. The connection configuration is finished. Now, all you need to do is click "Connect..." on the Hardware menu to launch connection through the Bluetooth transmitter/receiver. (Papywizard will display "Connected" at the bottom of the window). Press one of the Papywizard arrows to begin moving the motorized head. Papywizard ask for the Bluetooth transmitter/receiver password: Enter 1234, and validate.



3. Using the control panel

- Profiles creation:

Connect your controller then start Panorama. At the startup a window will appear asking you to select the connected controller. If you only have one connected device, you can simply click on continue (if nothing happens, wait while the computer detects the device and then reopens the software).

You can now, via the software interface, create, edit, and save the hardware profiles that you want to make your shots:

- ✓ File Menu => Save the configuration.
- ✓ File Menu => Open the saved configuration.
- ✓ Name: Name your profile (Nikon, Canon etc.).
- ✓ Focal Length: Define your focal length.
- ✓ Horizontal sensor: Define the camera's sensor width.*
- ✓ Vertical sensor: Define the camera’s sensor height.
- ✓ Nodal: Locate the nodal point.**
- ✓ Portrait/ Landscape: Indicate the portrait or landscape orientation.
- ✓ Standard/ Fisheye: Indicate the lens type.
- ✓ Wire etc.: Indicate the connection mode. Always select « Wire ».
- ✓ Add: Add your created profile to the profile list.
- ✓ Insert: Insert the profile to the indicated spot in the list.
- ✓ Read: Open the selected profile.
- ✓ Remove: Delete the selected profile.
- ✓ Program Touch Control: Save your profiles on the controller's memory.
- ✓ Read Session (.XML): Import the controller's data (already conducted sessions) then save it under an XML file format.***

* For a full-frame, it's 36mm. APS-C or DX lens formats will be a smaller size. Reference your camera's instruction manual for the size.

** The value is determined by each model and varies according to the lens model). The distance will be given on the controller screen as a guide for setting up the camera.

*** An XML file will be created for each session in the memory. Select the name and desired location for the file then click save. Your files are ready to be used with Autopano. RF chapter: using session files (XML) with Autopano.

Once your list of profiles created, click on "Program Touch Control" to save them in the controller memory.

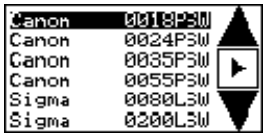
⚠ **For the autonomous touch screen controller to function correctly, the material profile must already be saved in the memory**

- Shooting

Verify that your controller is connected to the motorized head then turn the head on. There will be a start-up screen displayed for 5 seconds indicating the version of the software (e.g. 1.0).

- Profile selection menu:

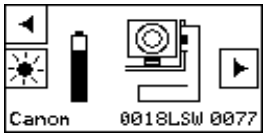
Use the up/down arrows to select your profile then use the right arrow to access the next menu. The screen displays, in order:



✓ The profile name (Canon).
✓ The focal length (0018).
✓ The camera orientation (Portrait (P) or Landscape (L)).
✓ The lens model (Standard (S) or Fisheye (F)).

- Mode

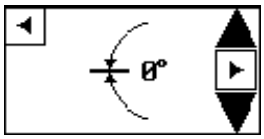
Indicate the selected camera orientation: portrait or landscape. The parameters are displayed; the last four numbers represent the distance needing to be used for the montage at the Nodal point.



In daylight, the retro lighting can be deactivated. The battery symbol has four levels. Level 1 indicates that you have about 1500 possible actions (with the Li-Ion batteries), 750 (with AA batteries). Click on the right arrow to access the next menu or on the left arrow to return to the previous menu. The motorized head moves slightly to measure the battery life.

- Horizon level

Adjust the motorized head's horizontal position using the screen's up/down arrows. Click on the right arrow to access the next menu or on the left arrow to return to the previous menu.

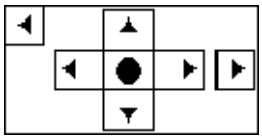


- The viewpoint: spherical, cylindrical, mosaic

Select panorama, angle, or mosaic mode by pressing the symbol or by clicking on the left arrow to return to the previous menu.

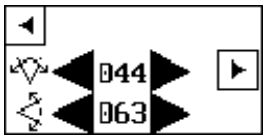
- Panorama mode:

You will be taken directly to the operating shooting screen, no other entry is needed.



- Angle mode:

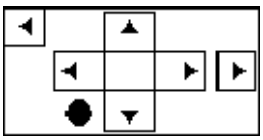
Click the right arrow to access the following menu or the left arrow to return to the previous menu. Using the horizontal arrows, select the horizontal angle of the panorama (1) then the vertical angle of the panorama (2).



The screen will indicate the minimum angle. Click on the right arrow to access the following menu or on the left arrow to return to the previous menu.

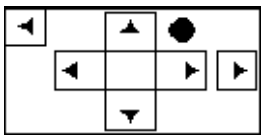
- Mosaic mode:

Using the four arrows, shift the motorized head to the bottom left corner of the desired field of view. The mosaic will begin at this point.



Click on the right arrow to access the following menu or on the left arrow to return to the previous menu.

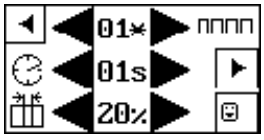
Using the four arrows, shift the motorized head to the top right corner of the desired field of view. The mosaic will end at this point.



Click on the right arrow to access the following menu or on the left arrow to return to the previous menu.

- Operation parameters

Using the top arrows, select the desired number of shots for each pose. (0-99, bracketing). Using the middle arrows, select the time lapse (0-99 seconds).

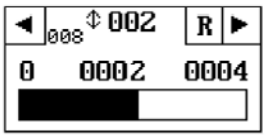


Set the time lapse to more than 99s to switch to manual mode, the display shows MMs. In manual mode, the head stops at each position to allow to readjust every settings (shutter, focal or else). Trigger the pictures by pressing the touch control panel.

Using the bottom arrows, select the desired overlap. (0%-50%) Using the touch at the bottom right, you can have a glimpse before taking the shot. Click on the right arrow to begin the shot by pushing on the right arrow or push on the left arrow to return to the previous menu.

- Operations menu

On top: the number of rows/columns of images. (e.g.002) Above the progress bar: The number of conducted images/ the total number of images.



The "XXX" information (e.g.008) shows the number of sessions that will be saved as XML data. The touch "II" pauses. Press the right arrow to start the session again or press the left arrow to stop the session and return to the software's settings menu. Press the "R" key to re-shoot the previous picture. You cannot pause while the camera is operating (during exposure time).

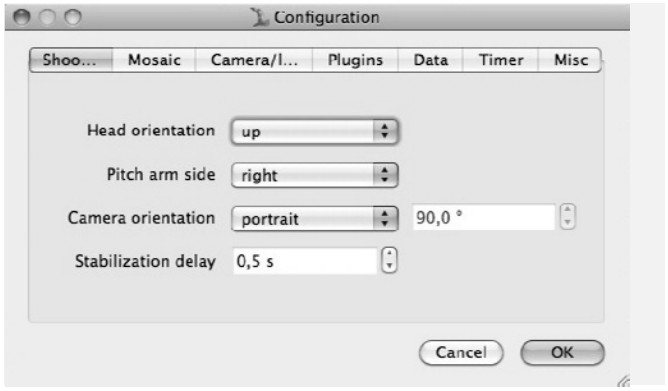
4. Using Papywizard

Papywizard can be used in two distinct ways: Mosaic mode and Preset mode. Here we will explain the easiest: Mosaic mode. First of all, you need to define certain parameters that are necessary for the software to function correctly. Let's begin at Papywizard's "Configuration"menu. (The parameters that are not indicated here are optional parameters).

- Shooting

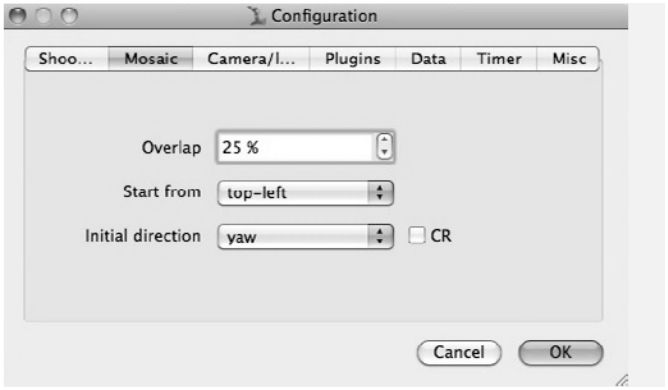
The Shooting tab allows you to define the camera orientation whether it be portrait or landscape mode (uniquely when using

the straight bracket or the L-bracket). With stabilization delay, you are able to regulate the delay between the motorized head's last movement and the camera's trigger. Increase the value if your photos are blurry.



- Mosaic

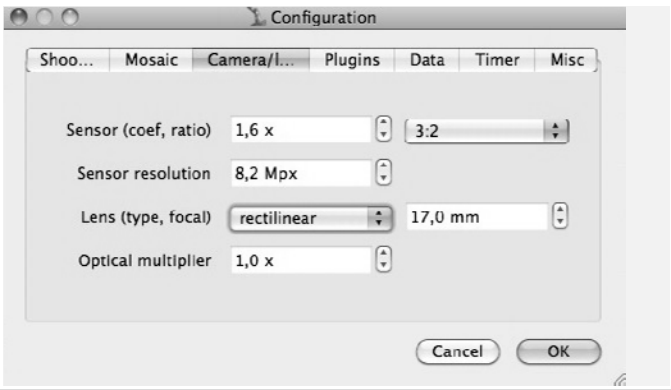
✓ “Overlap”: Define the overlap between images.
✓ "Start from": Define the order of the sequence.
✓ "Initial direction": Define the type of scanning sequence.



- Camera/lens

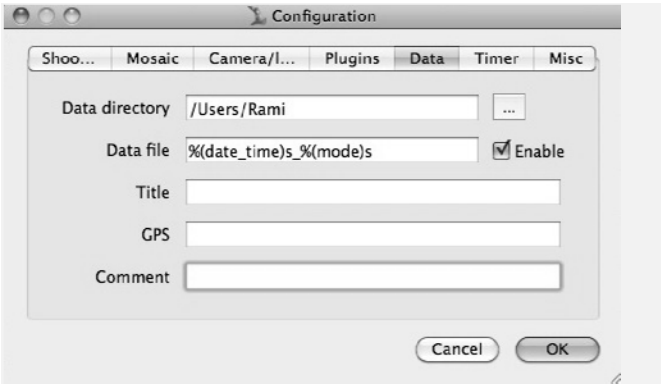
The "camera/lens" tab allows you to modify the width of the shutter triggering pulse generated by the motorized head (if the camera triggers more than once, reduce the pulse. If, on the contrary, the camera does not trigger, increase the duration). The sensor setting is very important; it must be set according to your camera's specifications.

For a "full-frame" camera, indicate 1. For cameras that are not full-frame, indicate the multiplier coefficient according to the manufacturer's specifications. (For Canon, it is often a ratio of 1.6 and for Nikon it is 1.5). Underneath indicate your camera's sensor resolution. In Mosaic mode, only rectilinear lenses are possible (these are classic lenses, not fisheye). Choose the focal length then indicate the optical multiplier coefficient (when using a rectilinear lens only).



- Data

The "Data" tab allows to plan the save of an XML file describing the session at the end of each shoot. These data are directly exploited by Autopano and allow a faster and more accurate stitching of your pictures. RF chapter: using the XML session files (XML) with Autopano. Check « Enable » in the Data file field for Papywizard to create an XML file of your sessions.



- Launch a session

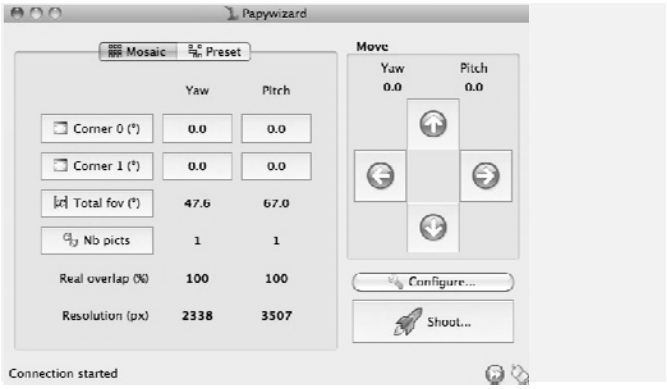
Validate the settings to go back to Papywizard's principal screen. (If you haven't already done it, attach your camera to the attachment zone and reconnect the trigger cable from your camera to the motorized head). Shift the motorized head to one of the corner of the desired shooting scene, then click on Corner 0 (°). The mosaic will start at this point. Shift the motorized head to the opposite corner of the desired shooting scene, then click on Corner 1 (°). The mosaic will end at this point. It does not matter which corner you use for start or end, but it will influence the direction the pano will be shot. Note that, depending of the settings, Papywizard can start shooting from the start position, or from the end position.

✓ Total Fov: panorama's horizontal and vertical coverage in degrees.

✓ Nb picts: number of photos required to cover the desired shooting scene.

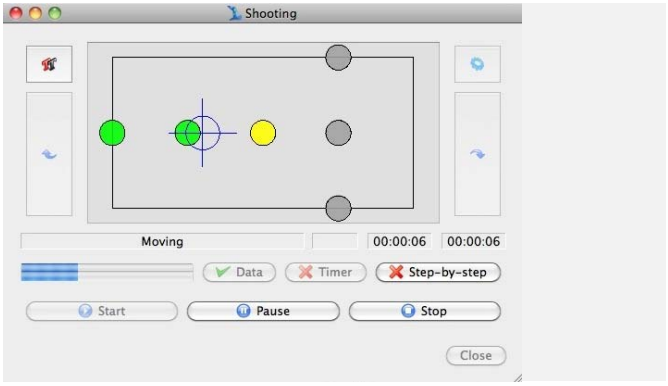
✓ Real overlap: Real overlap is indicated to provide verification.

✓ Resolution: Estimations of the final panorama resolution.



The parameters are now configured. Click on shoot to begin. A window will appear so that you will be able to follow the shooting as it takes place. The window shows the matrix of photos to be taken for the desired panorama. (Here, 8 photos high by 39 photos on the horizontal level).

- ✓ Yellow box: The next photo to be taken.
- ✓ Green boxes: Photos already taken.
- ✓ Target: Actual position of the head.

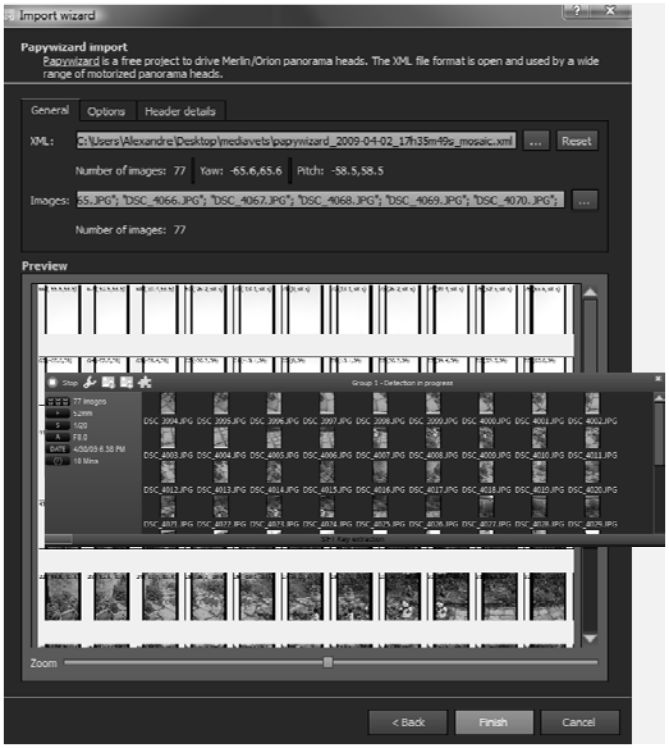


The bottom field indicates whether the motorized head is moving in the stabilization stage or trigger stage along with the time elapsed since the beginning of the sequence.

- ✓ Step-by-step: Move the system along step-by- step.
- ✓ Start: Launch the sequence.
- ✓ Pause: Pause the sequence.

5. Processing the session files (XML) with Autopano

Open Autopano then click File/Import. Choose Papywizard then click next. Click on the top ellipsis, select the already saved XML file from the session. Click the bottom ellipsis then select your pictures. Define the desired options. Name your file then click finish. Autopano will automatically launch the stitching of your pictures.



6. Technical Features

- Motorized Head

- ✓ Aluminum cast, plastic cover. Single arm.
- ✓ Weight : 2,2kg. Size: 280 x 210 x 120mm.
- ✓ Accuracy: 0.25° (mechanical tolerance : 0, 015 °-0, 50°).
- ✓ 360° rotation on 2 bases, no restrictions.
- ✓ 30mm space between the vertical rotational axle and the L-bracket side (ø60 maxi lens).
- ✓ Power: eight AA batteries/ two LSM-160 batteries / external 12V battery.
- ✓ ASCII protocol
- ✓ Max speed (x800), a complete turn takes place in 50s, the motor turns 6000tr/min.

- Straight rail

- ✓ Weight : 150 g. Size : 190 x 44 x 15 mm.
- ✓ Nodal Distance: 30 -150 mm.
- ✓ Camera screw : ¼"x 21 mm.
- ✓ Rail screw for L-bracket : ¼"x 25 mm.
- ✓ Rail nut for L-bracket : ¼".
- ✓ Bushing for L-bracket : dia. 19/10 x 7 mm.

- L-bracket

- ✓ Weight : 220 g. Size : 135 x 108 x 45 mm.

- Battery connector

- ✓ Weight : 15 g. Size: 96 x 30 x 20 mm.

- Batteries

- ✓ Li-Ion SB-LSM 160. Amperage: 1600mAh.
- ✓ Power: 7,4V.
- ✓ Weight : 89 grams. Size : 53 x 30 x 31 mm.
- ✓ Charge time : 4h-4h15.
- ✓ Autonomy : 10-11h/ 2500-3000 movements.

- Charger

- ✓ Li-Ion battery charger.
- ✓ Weight : 82 grams. Size : 90 x 51 x 35 mm.
- ✓ AC input : 90V-250V 50/60Hz
- ✓ DC input : 12V Car plug. DC output : 4.2-8.4V 800mA (max).
- ✓ USB output : 5V 1000mA(max)

- Touch Control Panel

- ✓ Touch screen : 30 mm x 50 mm. LED orange. Silver.
- ✓ USB Mini B cord : PC.
- ✓ RJ12-6 connector : Orion Head (RS232 + power supply).
- ✓ r 3.5 mm Stereo connector: Camera trigger (Shutter + Focus).
- ✓ 3.5mm Mono connector : Infrared diode cable.
- ✓ Size : 100 x 62 x 26 mm. Weight : 100 grams.
- ✓ Connection: Plug provided. L: 75 mm.

- USB Bluetooth Dongle

- ✓ Module Class 2. Reach: up to 30m. Auto-powered USB.
- ✓ Windows, Linux & Mac OSX compatible.

- Transmitter/receiver Bluetooth

- ✓ Module Class 1. Reach: up to 100m. Auto-powered.
- ✓ Pairing code : 1234.

7. Returns and warranty, GPL license

- Returns:

All returns on physical products, no matter what the reason, must be agreed upon in advance. To do so, you must contact us to explain the reasons for return. Once we have agreed, we will

send you instructions for returning the product. All returned products without a return agreement will not be refunded or exchanged. All potential returns must be done within fourteen days of receiving the product (date as postmark) and the product must be returned in perfect condition. Return fees will be charged to the client except in cases of an error on our part. License and software products do not have any warranty, in accordance with rules and regulations of the intellectual property and the author's rights. If the products break down, please contact your vendor, depending on your place of purchase. Do not forget to include the product number in concern (if necessary) along with a copy of your receipt. Returns and replacements requests will be processed within a period of up to three weeks depending on the case.

- Warranty and safety conditions:

Warranty valid uniquely if there is a malfunction during normal use of the product as stated in the present-day user manual. Attention: all modifications or changes to a part of the product or to the whole product will entail an immediate cancellation of the warranty and could alter safety conditions. Attention: all use that does not follow the present-day user manual could cause damages to the product and its environment. Use the product with care. Risk of damaging the product by impact, shock, drop, or movement. Keep the product away from moisture or significant temperature changes. Keep the product away from water and other liquids. All of the material elements in the pack (except the batteries: one month) have a one-year warranty, under reserve of the warranty and safety conditions.

We decline all responsibility in the case of direct or indirect damages linked to product use. Do not dispose of this product in your household garbage can. As the final user, you must bring your products to the collection locations made available by your community to ensure respect for the environment. For more details concerning collection locations, please contact your local authority on the subject.

- Papywizard GPL license:

Papywizard is not a commercial project. All of the Papywizard files and documents are under CeCILL, a free French license, and is GPL compatible: www.cecill.info/licences/Licence_CeCILL_V2-en.html

8. Support and documentation

- Download Center: (www.kolor.com)

A download center is made available for you on our website to download the Panogear software and our different demos.

- Resource Center: (www.autopano.net/wiki-en)

You will find on the resource center the complete documentation, FAQ, forum and community projects.

- Technical support and after sales service:

For all questions, please first contact your vendor, according to your place of purchase or contact our customer support service at the following address: contact@kolor.com