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> OMAX A3550U 5.0 MP Digital USB Microscope Camera Instruction Manual

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Model: A3550U

INTRODUCTION

The OMAX A3550U is a high-resolution 5.0 MP digital USB microscope camera designed for capturing still images and streaming live videos through your microscope. It offers broad compatibility with Windows, Mac OS X, and Linux operating systems. This camera is equipped with a 0.5X reduction lens and a 0.01mm calibration slide, enhancing its utility for various microscopy applications. The included software provides advanced features such as image stitching, extended depth of focus (EDF), video recording, and precise measurement functions. This manual provides essential information for the proper setup, operation, and maintenance of your OMAX A3550U digital microscope camera.

WHAT'S IN THE BOX

Carefully unpack all components and verify that you have received the following items:

- 5.0 MP Digital Camera (Model A3550U)
- 0.5X Reduction Lens
- USB 2.0 Cable
- Software CD (includes Driver, Software, and User's Instruction)
- 23.2mm to 30mm Adapter
- 23.2mm to 30.5mm Adapter
- 0.01mm Calibration Slide (Stage Micrometer)



Figure 1: Contents of the OMAX A3550U Digital USB Microscope Camera kit, including the camera, reduction lens, USB cable, software CD, adapters, and calibration slide.

SETUP

1. Software Installation

Before connecting the camera, install the necessary drivers and software from the included CD or download the latest version from the OMAX official website. The software is compatible with Windows, Mac OS X, and Linux operating systems. Follow the on-screen instructions for installation.

2. Camera Connection to Microscope

The OMAX A3550U camera can be connected to your microscope in two primary ways:

- 1. C-Mount Connection:** If your microscope has a C-mount port, attach the camera directly to this port. The camera features built-in C-mount compatibility.
- 2. Eyepiece Tube Insertion:** For microscopes without a C-mount, or for eyepiece tube integration, insert the camera into the eyepiece tube.
 - First, attach the 0.5X reduction lens to the camera.
 - Then, use the appropriate adapter (23.2mm to 30mm or 23.2mm to 30.5mm) to fit the camera assembly into your microscope's eyepiece tube. The camera is designed to fit 23.2mm, 30mm, and 30.5mm photo ports.



Figure 2: The OMAX A3550U camera unit, showing its compact design and USB port.



Figure 3: The 0.5X reduction lens adaptor, used for eyepiece tube insertion to achieve a wider field of view.

3. USB Connection

Connect the camera to your computer using the provided USB 2.0 cable. Ensure the software is installed and running before connecting the camera for the first time.

OPERATING INSTRUCTIONS

1. Launching the Software

After successful installation, launch the OMAX imaging software on your computer. The software should automatically detect the connected camera and display a live video feed from your microscope.

2. Adjusting Image Settings

The software provides various controls for adjusting image parameters such as brightness, contrast, saturation, and white balance. Optimize these settings for clear and accurate representation of your specimen.

3. Capturing Images and Videos

- **Still Images:** Use the dedicated capture button or menu option within the software to take high-resolution still images (up to 2592x1944 pixels). You can set different resolutions for live video and still image capture.
- **Video Recording:** The software allows for live video streaming and recording. Select the video recording option and specify the desired resolution and frame rate. The camera supports frame rates of 5fps at 2592x1944, 18fps at

1280x960, and 60fps at 640x480.

4. Advanced Software Features (Windows)

The Windows software offers advanced functionalities to enhance your microscopy work:

- **Stitching:** Combine multiple images to create a larger, panoramic view of your specimen.
- **Extended Depth of Focus (EDF):** Merge images taken at different focal planes to produce a single image with greater depth of field.
- **Measurement Functions:** Perform precise measurements on your captured images using the 0.01mm calibration slide. The software allows for notes, shapes, and watermarks.
- **Image Editing:** Edit and process images within the software.

5. Using the Calibration Slide

The included 0.01mm calibration slide (stage micrometer) is essential for accurate measurements. Place the slide on your microscope stage, focus on its markings, and use the software's calibration tools to set the scale for precise measurements of your specimens.

MAINTENANCE

Proper maintenance ensures the longevity and optimal performance of your OMAX A3550U camera.

- **Cleaning:** Keep the camera body and lens surfaces clean. Use a soft, lint-free cloth for the camera body. For the lens, use a specialized lens cleaning solution and cloth to avoid scratches. Do not use harsh chemicals.
- **Storage:** When not in use, store the camera in a dry, dust-free environment, preferably in its original packaging or a protective case. Avoid extreme temperatures and humidity.
- **Handling:** Handle the camera with care. Avoid dropping it or subjecting it to strong impacts, which can damage internal components.
- **Software Updates:** Periodically check the OMAX website for software and driver updates to ensure compatibility and access to the latest features and improvements.

TROUBLESHOOTING

If you encounter issues with your OMAX A3550U camera, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
No image displayed in software.	<ul style="list-style-type: none">◦ Camera not properly connected to USB port.◦ Drivers not installed or corrupted.◦ Software not recognizing the camera.◦ Microscope light source off or too dim.	<ul style="list-style-type: none">◦ Ensure USB cable is securely connected to both camera and computer. Try a different USB port.◦ Reinstall camera drivers from the provided CD or OMAX website.◦ Restart the software and/or computer.◦ Turn on the microscope light and adjust its intensity.
Image is blurry or out of focus.	<ul style="list-style-type: none">◦ Microscope focus not adjusted.◦ Camera not properly seated in the port.◦ Lens or camera sensor dirty.	<ul style="list-style-type: none">◦ Adjust the fine and coarse focus knobs on your microscope.◦ Ensure the camera or adapter is fully inserted and secured in the microscope port.◦ Clean the camera lens and microscope optics.

Problem	Possible Cause	Solution
Image appears too dark or too bright.	<ul style="list-style-type: none"> ◦ Microscope light intensity incorrect. ◦ Software exposure settings are off. 	<ul style="list-style-type: none"> ◦ Adjust the light source intensity on your microscope. ◦ Use the software's exposure, brightness, and gain controls to optimize the image.
Image is reversed (left-to-right).	<ul style="list-style-type: none"> ◦ This is a characteristic of some microscope optical paths when using a camera. 	<ul style="list-style-type: none"> ◦ Utilize the image flip/mirror function within the OMAX software to correct the orientation.

SPECIFICATIONS

Hardware

- **Model:** A3550U
- **Image Sensor:** Aptina 1/2.5" color CMOS
- **Resolution:** 2592x1944 pixels (5.0 MP)
- **Pixel Size:** 2.2µm x 2.2µm
- **SNR (Signal-to-Noise Ratio):** 40.5dB
- **Dynamic Range:** 66.5dB
- **Frame Speed:** 5fps at 2592x1944, 18fps at 1280x960, 60fps at 640x480
- **Interface:** USB 2.0
- **Reduction Lens:** 0.5X, fits 23.2mm eyepiece tube
- **Calibration Slide:** 0.01mm (1mm/100 division)
- **Adapters:** Fits 30mm and 30.5mm eyepiece tubes
- **Dimensions (no reduction lens):** Ø63mm x 37mm
- **Operating Environment:** -30°C to 70°C
- **Power:** Direct via USB port
- **Mounting:** C-mount or eyepiece tube (23.2/30/30.5mm)
- **Gross Weight:** 0.62 kg (1.37 lbs)
- **Product Dimensions:** 6.69 x 5.91 x 2.36 inches
- **Item Weight:** 1 pound
- **Material:** PE (Polyethylene)
- **Color:** Gold
- **UPC:** 670541471456

Software

- **Compatibility:** Windows, Mac OS X, Linux
- **Features:** Advanced editing, processing, measurement, stitching, EDF, video recording.

WARRANTY AND SUPPORT

For specific warranty information regarding your OMAX A3550U Digital USB Microscope Camera, please refer to the documentation included with your purchase or visit the official OMAX website. Warranty terms typically cover manufacturing defects for a specified period from the date of purchase.

For technical support, software updates, or further assistance, please contact OMAX customer service through their official website or the contact information provided in your product documentation.

