

INSTRUCTION MANUAL

CAT. 68350-50x, 68350-50x-2, 68350-50x-M ProScope Wireless, HR, or HR5 w/50x



**Electron
Microscopy
Sciences**

1560 Industry Road Hatfield, PA 19440
P.O. Box 550
TEL: 215-412-8400 FAX: 215-412-8450
TOLL FREE: 1-800-523-5874
EMAIL: sgkcck@aol.com
WEB: www.emsdiasum.com

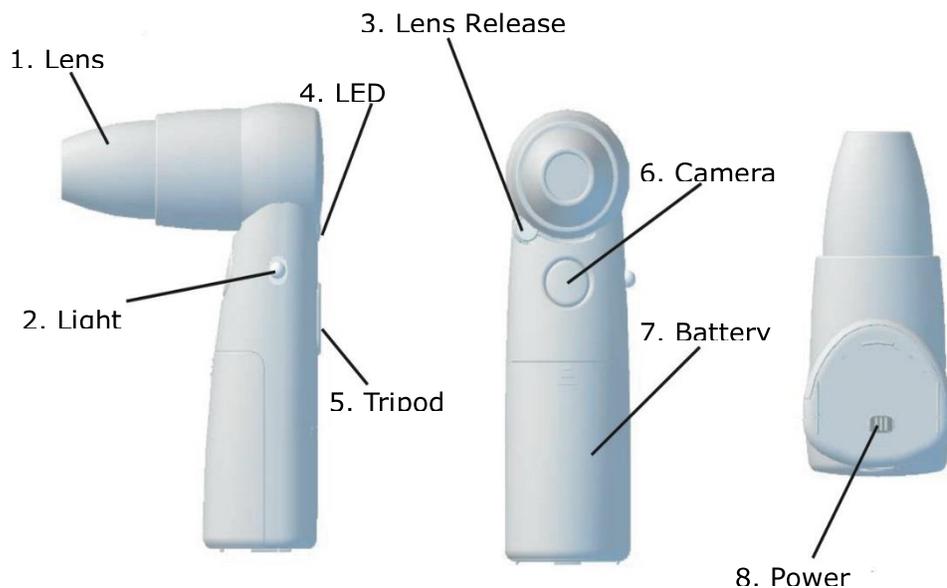
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Component Names and Functions



	Name	Function
1	Lens cone	Focusing position
2	Light switch	For illumination
3	Lens release button	Unlocks lens for removal
4	LED indicator	Indicates power is ON
5	Tripod mount	Connect to ProScope stand or standard tripod
6	Camera button	Still picture capture or freeze
7	Battery cover	For battery access and installation
8	Power switch	Main power switch

Preparation Before Use

Slide off the battery cover and insert (3) AA batteries.

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Battery cover removed.

Insert (3) AA batteries, paying attention to the polarity. You may use alkaline or Ni-MH. Do not mix battery types or mix new batteries with old batteries. Rechargeable Ni-MH batteries are recommended for most economical use.

Using the ProScope

TURNING THE POWER ON

Slide the power switch to the ON position. The LED indicator will light up. NOTE: When the battery voltage decreases, the power source is cut off and the LED will go out. When this happens, please install fresh or freshly charged batteries for continued use.



IPHONE/IPOD TOUCH/IPAD CONFIGURATION

From your device or from a computer that is synced to your device, please visit the Apple iTunes App Store and download the FREE ProScope mobile app. NOTE: For iPhone and iPod touch, the app is called "AirMicro". For iPad, the app is called "AirMicroPad".

To configure your Wi-Fi network settings for use with the ProScope mobile camera, follow these steps:

1. On your device, choose Settings.
2. Turn on WI-Fi.
3. Select AirMico from the wireless network menu. Every ProScope mobile unit can be different. In this example, the wireless network name is AirMicro119.



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4. Configure the AirMicro network. Click on the arrow on the AirMicro network which opens a new screen. Click on the Static tab and then click on the IP address field and input the following:



[192.168. (3-digit AirMicro network number).(user selectable value between 2 – 254, which represents a unique IP address for this device.)

In this example, the IP address is 192.168.119.100
Input subnet mask 255.255.255.0

NOTE: If your AirMicro network number contains a leading zero (or zeros), the zero should be dropped in the IP address. For example, AirMicro055 will have an IP address of:

192.168.55.100

5. Press the Home button on your device to exit Settings.



AIRMICRO/AIRMICROPAD APP OPERATION

With the ProScope mobile camera ON and your AirMicro network configured correctly, launch the AirMicro (or AirMicroPad) app on your device.

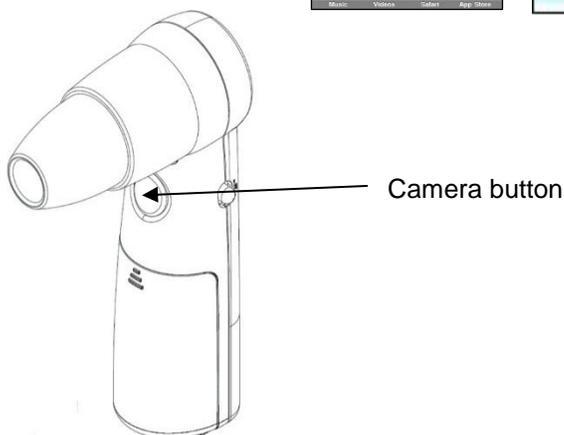
When the AirMicro app is first launched, it will try to find your ProScope mobile camera. If it does not find your camera, the searching screen will appear until it finds the camera. NOTE: If the searching screen persists, check to make sure your AirMicro network is the active Wi-Fi network selected.

After the ProScope mobile camera is found, it will start displaying a live image.

Capture: To capture a still image, tap the LiveView-Capture icon in the lower right corner of the screen or, press the camera button on the ProScope mobile. Captured still images are stores in the Photos library on your device.



LiveView-Capture



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Image Adjustments

ADJUSTING THE WHITE BALANCE

The ProScope mobile has an adjustable white balance. This adjustment is very subtle but can slightly improve the color balance of the viewed subject. To adjust the white balance, follow these steps:

1. Power ON the ProScope mobile and turn on the LEDs.
2. Launch the AirMicro app.
3. Press the ProScope lens in touch view to a white sheet of paper.
4. Press and hold the camera button until the LED indicator begins flashing. Release the camera button after the desired white balance is achieved. The white balance setting is now stored even when the power switch is turned OFF. NOTE: If the camera button function is ON in the AirMicro app, a picture will be captured before white balance adjustment will begin.

CHANGING THE CAMERA RESOLUTION

The default resolution of the ProScope mobile is QVGA (320 x 240) but can be changed to VGA (640 x 480). To toggle between the two, do the following:

1. With the main power switch in the OFF position, press and hold the camera button while turning the power switch ON. As soon as you see the LED indicator flash, press the camera button again to switch between QVGA and VGA resolutions.
2. If the LED indicator quickly flashes once before turning solid, this indicates a selection of QVGA. If it flashes twice, this indicates a selection of VGA. NOTE: Selecting VGA resolution will result in a slower frame rate but a higher resolution image.

INITIALIZING FACTORY SETTINGS

1. With the main power switch in the OFF position, press and hold the camera button while turning the power switch ON.
2. Keep holding the camera button for several seconds until the LED indicator flashes for several seconds and then turns solid, then release. The factory settings have been reset. NOTE: White balance and camera resolution are the only parameters that get reset. These two parameters can also be easily changed in standard operation of the ProScope mobile camera.

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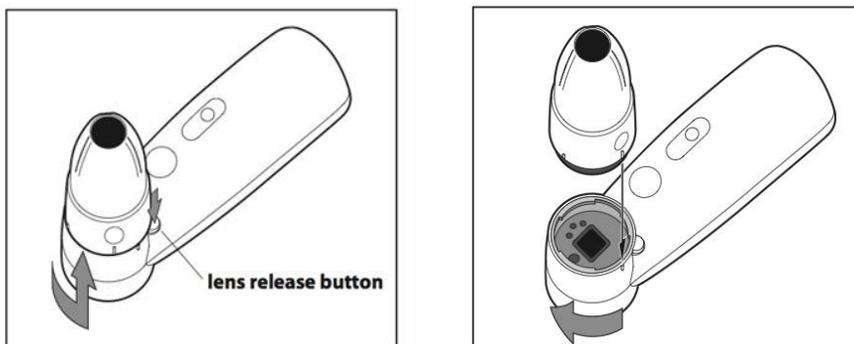
Removing and Installing a Lens

REMOVING A LENS

To remove a lens, press the lens release button while turning the base of the lens counter clockwise. When the hash mark on the lens and the hash mark on the ProScope mobile body line up, you can then gently pull the lens straight up and off.

INSTALLING A LENS

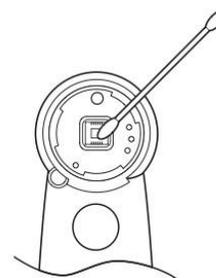
To install a lens, line up the hash mark on the lens and the hash mark on the ProScope mobile body, then press down gently until the lens is seated. Turn the base of the lens gently clockwise until the lens locks into position. You will hear a click when it is in place. Do not force pressure.



Maintenance

CLEANING THE IMAGER

To clean any dirt or debris that might collect on the imager, remove the lens and use compressed air to blow off any particles. If further cleaning is required, a cotton swab or microfiber cloth lightly dampened with a 50/50 solution of isopropyl alcohol and water can be used to wipe away any particles stuck to the glass cover of the imager. You can use a cotton swab or microfiber cloth but do not use paper. Wipe only in one direction so the debris is swept off the imager rather than just spread around. Finish with a light blast of compressed air to remove any loosened particles.



CLEANING A LENS

To clean a lens, use compressed air to blow off any particles from the inner lens assembly. If the lens cone needs to be cleaned, a microfiber cloth lightly dampened with water can be used to wipe down the outside plastic. You may also use isopropyl alcohol to clean the outside plastic cone. However, be sure to use a 50/50 alcohol/water solution to avoid plastic discoloration.



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FAQ and Troubleshooting

FAQ

Q. Can I view live video from the ProScope Mobile on more than one iPad simultaneously?

A. Yes, you can view live video from one ProScope Mobile on up to 253 simultaneous devices including any mix of iPhone, iPod touch, and iPad. All you need to do is set up each device with a different receiving IP address. For example, if the AirMicro network is 119, below is an example of how to set up 4 devices.

Device 1 Static IP = 192.168.119.2

Device 2 Static IP = 192.168.119.3

Device 3 Static IP = 192.168.119.4

Device 4 Static IP = 192.168.119.5

...and so on if you want to add even more simultaneous devices up to 253 devices.

Q. Can I view video from the ProScope Mobile on my device when I'm outside, away from my normal Wi-Fi network?

A. Yes, the ProScope Mobile IS its own Wi-Fi network which broadcasts live video to any device that is running the AirMicro app and is tuned into the broadcast via an appropriate static IP address.

Q. Why does the ProScope Mobile use a Wi-Fi connection instead of Bluetooth?

A. Wi-Fi is a faster and more robust connection allowing for up to 253 devices to view video from the ProScope Mobile simultaneously. Bluetooth, although great for close-range peripherals like keyboards etc, does not have the bandwidth necessary for streaming high quality video or the ability to connect more than about 3 devices simultaneously.

TROUBLESHOOTING

Q. Why does my device lose connection with the ProScope Mobile when I turn both my device and the ProScope Mobile off then back on again?

A. If you have 'Ask to Join Networks' enabled on your device or have other previously joined networks operating in range of your device, your device will automatically join the next available network when the ProScope Mobile is turned off. Make sure to reselect your ProScope Mobile network before launching the AirMicro app again. To prevent this from happening, in your Settings control panel on your device, turn 'Ask to Join Networks' OFF and also choose 'Forget this Network' on any previously joined network that shows up in your network list.

Q. Why does the ProScope Mobile LED indicator go out during operation?

A. The batteries are weak and need to be changed. Replace the batteries with a fresh (or freshly charged) set for continued operation.

Q. Why do I get a spinning COG in the AirMicro app?

A. Make sure your device is within in the 10 meter range of your ProScope Mobile. If you are within the 10 meter range and the spinning COG persists, the batteries are probably weak and need to be changed. Replace the batteries with a fresh (or freshly charged) set for continued operation.

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Tip - If you power off the ProScope Mobile while the AirMicro app is running causing the spinning COG to persist, even after exiting the app, you may manually force the app to close to reset the connection. To do so, double-click the Home button to show the multitasking bar at the bottom of the screen. If you don't initially see the AirMicro app, flick left to see more apps.

To force the AirMicro app to close: Touch and hold the app icon until it begins to jiggle, then tap the 



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Specifications

****Important: The ProScope Mobile only works on Apple iOS devices including iPhone, iPad and iPod touch. This device DOES NOT WORK with Mac or PC computers.**

Compatible Host Devices	Apple iOS devices including iPhone, iPad, and iPod touch
Image sensor	1/4 inch 5Mp Color CMOS
Resolution	320x240 (QVGA) / 640x480 (VGA)
Capture	Still image capture by Application
White Balance	MWB
Gain	AGC
Frame Rate	QVGA about 15fps (It changes with radio wave environment and the use device.)
Camera button Functions	a) Still image capture b) Push W/B after still image captured c) QVGA/VGA exchange d) Initialize for factory settings (Maintained after power supply is switched OFF)
Indicator LED	ON: The image is being transmitted OFF: Power OFF or Battery is low Flash 0.5sec: The W/B is being changed Flash 1sec: The resolution is being changed Flash 2sec: Initialize for factory settings
Light Switch	A-OFF-B (depends on the attached lens) A: OFF, or reflective LEDs OFF:OFF B: Reflective LEDs, or Non Reflective LEDs
Power Switch	ON/OFF Slide switch
Magnification	X50 (when standard lens is used) Approximate magnification when displayed on 14-inch monitor.
Support Protocol	Wi-Fi IEEE802.11b
Camera Operational Range	about 10m from a Wi-Fi connected device
Access Format	ad hoc mode
Antenna	Internal Chip Multilayer antenna
Frequency	2.4GHz band width
SSID	AirMicroNNN
IP Address	192.168.NNN.1
Camera Screw	1/4-20 UNC
Battery	AA(Alkaline,Ni-MH)x3
Power Consumption	about 2.5W with standard lens
Continuous Operation time	Alkaline: about 2 hours, Ni-MH about 3 hours with standard lens. (Depends on environment)
Lens Mount	Standard ProScope Mount Supply Current: A and B about 5V 120mA
Operation Temp	0°C~40°C
Storage Temp	-10°C~60°C

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Outside Dimensions	153mm(H)x46mm(W)x43mm(D) (without Lens)
Weight	130g (without battery, with Lens)
Patented Technology	US Patent 5,442,489
Regulatory Compliance	FCC, CE Compliant
*	Specifications subject to change without notice.

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