RECONYX
SEE WHAT YOU'VE BEEN MISSING...

MicroFire™

Professional & Security Camera User Manual

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Camera Overview

Congratulations on purchasing a RECONYX® camera. RECONYX® has been the leader in motion activated cameras since 2002. Your MicroFire™ camera is a state-of-the-art digital camera, Passive Infrared (PIR) motion detector and a night time illuminator, all contained in a secure, rugged and weather-resistant case.

The MicroFire camera is intended to be used in conjunction with the RECONYX® Mobile App for wireless communication and transmission of photos from up to 100 feet away.

Mobile Device System Requirements:

 * iOS version 9.0 and higher
 * Android version 4.4 (KitKat) and higher
 * Android devices must have Bluetooth Smart / BLE.

Thank you for putting your trust in us!

Contents of this package:

- MicroFire™ Camera.
- Universal Camera Mount.
- Links to download the required RECONYX® Mobile App.

Other things you will need:

- Micro Secure Digital® (SD or SDHC) Memory Card.
- 6 AA Batteries.
  - *NOTE: MicroFire™ cameras will only operate on either NiMH rechargeable batteries or Energizer® 1.5V AA Ultimate Lithium™ batteries.*

NOTE: **If you have any questions or concerns relating to the operation or functionality of your camera, please contact our Technical Service Department by email at support@reconyx.com or by calling toll free 866-493-6064.**

MicroFire™ Specifications

Night Time Illumination	NoGlow™ Covert Infrared up to 50 feet
Image Resolution	720P HD Video with Audio Still Image Resolution: 3.0 MP (1.0 MP MS7)
Trigger Speed	0.20 second (0.10 second MS7)
Battery Requirements	6 AA size Lithium or NiMH Rechargeable Batteries
SD Card Capacity	Up to 32GB
Time-Lapse Surveillance	Included
Warranty	5 years

RECONYX Mobile App

RECONYX® Security Series MicroFire™ Cameras require the RECONYX® Mobile App. The app is free and can be downloaded from the App Store or Google Play.

The app provides all configuration options for your camera and can download photos wirelessly when in range with the camera. It includes mapping with Google Maps® technology and image management to geographically organize and access your images and videos. The RECONYX® Mobile App also enables you to easily upload and share your RECONYX® photos to Facebook® and Twitter®.

Mobile Device System Requirements:

 * iOS version 9.0 and higher or Android version 4.4 (KitKat) and higher
 * Android devices must have Bluetooth Smart / BLE.

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Batteries & Memory Cards

Your RECONYX® MicroFire™ camera runs on six AA-cell batteries. We highly recommend using either Energizer® Ultimate Lithium™ batteries or high-quality NiMH Rechargeable batteries in your camera. **Alkaline batteries do not provide as much power as Lithium or NiMH batteries, they are adversely affected by both hot and cold weather and are not recommended.**

NiMH will operate at temperatures down to 0°F. Lithium batteries will operate to -20°F.

NOTE: Be sure to load batteries in the proper orientation (The coil spring is the negative contact point in the battery cartridge).

Warning! Do not mix battery types! Damage to the camera can result and your warranty will be voided if you mix battery types.

Micro Secure Digital® (SD or SDHC) Card Specifications

A Micro Secure Digital (SD/SDHC) card is used to store the pictures your camera captures. These images may be transmitted to your mobile device using the RECONYX Mobile App.

Inserting and Removing memory cards

Make sure the orientation is correct and that the card is aligned properly. Push gently on the memory card until it meets resistance and is seated securely. Remove by pulling up on the card's lip with your finger nail and then grasping the card with your fingers.

Warning! Inserting the memory card upside down or backwards could damage the camera or the memory card. Damage resulting from inserting the card incorrectly is not covered under warranty.

Memory Card - File System Requirements

Secure Digital cards have various speeds and capacities. Larger capacity cards are capable of storing more images. Your MicroFire™ camera can accept cards up to 32GB.

Troubleshooting your memory card

If you have a memory card that does not seem to work, or you used the card in another device, you may have to re-format your memory card. This can be done with any Windows® Operating System.

Windows® – Steps to format memory card

Step 1: Insert your memory card into your computer's card reader.
Step 2: Click *"Start -> My Computer"*. You should see your memory card under the list of available drives. Be sure to check its contents first to make sure that you have the right drive.
Step 3: Right-click on the drive and choose *'Format'*.
Step 4: Under *"File system"* select the *"FAT32"* option then click on *'Start'*.
Step 5: Once the process is completed, take the memory card out and insert it into your Camera.

Setup & Programming

With the batteries and microSD card inserted in the camera, turn your camera on by twisting the front of the camera to the **On** position. The camera is operational once the green light disappears. Note: Camera will auto-arm itself after 2 minutes of inactivity.

Connect with Reconyx App

After downloading the Reconyx Mobile App to your device, select MicroFire™ from the Main menu. You will be prompted to perform a MicroFire™ Firmware Update. This will ensure that you have the latest version for your camera to perform successfully. In addition, you will be guided through a step-by-step tutorial which will help to familiarize yourself with your MicroFire™ camera.

Setup Wi-Fi Network

Follow these steps to connect your MicroFire™ to your local Wi-Fi network. Once this setup is complete, your MicroFire™ camera can send you pics in near real-time via email.

From the main menu in the Reconyx App, press MicroFire™. This will take you to the MicroFire™ Scanning page. Select your camera which will be displayed like "MicroFire xxxx" where the xxxx's represent the unique id of your camera.

The next Screen displays all the actions you can perform on your MicroFire™. For network configuration, select **Setup Wi-Fi Network.**
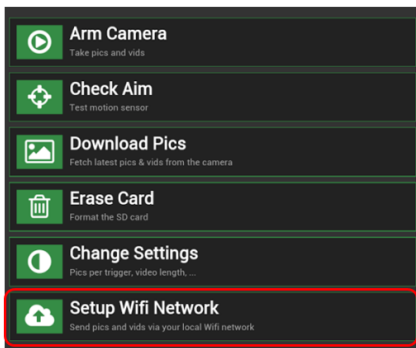
Network Connected Settings

This will help you configure your camera to send images through email via your local Wi-Fi network.
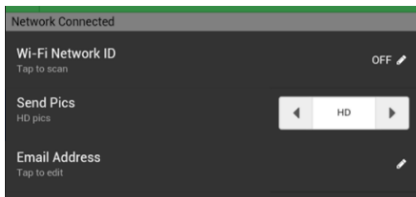
- Wi-Fi Network ID. On the initial setup, the App will ask you to enter your Reconyx Account Login information. This will register your camera with the Reconyx server so that it will be able to send emails. Once your account has been successfully registered the app will scan for list of local Wi-Fi connections available. Select the desired network and enter your Wi-Fi Password.

- Send Pics – Select image size for email attachment: Small (Mobile Optimized pics) or HD pics (MS7 sends all HD pics all the time).

- Email Address – Tap to Edit. Enter the desired destination email address. Note: multiple email addresses can be added.

Once Network Connection has been configured successfully, press the *Save Changes* button.

*NOTE***:** Some Wi-Fi networks need to know the MAC address for your MicroFire™ camera for filtering purposes. The MAC address for your camera can be found in the App on the Change Settings -> About Camera screen.

Arm Camera

The Arm Camera option will display current settings and arming configuration. The Network Connected section under the Advance heading will show the signal strength between the camera and the local Wi-Fi network.

NOTE: This may take a few seconds to find the Wi-Fi network signal.

TIP: Utilize the signal strength to determine the optimal distance between your camera and local Wi-Fi network.


Once camera has been armed, you should see receive a status email at your previously entered email address. This will indicate that you have successfully connected your MicroFire camera to your network.

NOTE: If emails are not being transmitted, verify that your email address is correct and that the signal strength between your camera and network is sufficient.

TIP: A Wi-Fi extender may be used to extend the reach of your camera to your local Wi-Fi or access point.

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Remote Camera Summary

Once successfully registered and connected to your local network, you have the option to remotely update settings for your MicroFire camera. The "Cloud" icon represents that you are accessing the camera remotely (as opposed to a local Bluetooth connection):
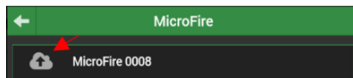
This will display the Remote Camera Summary screen:
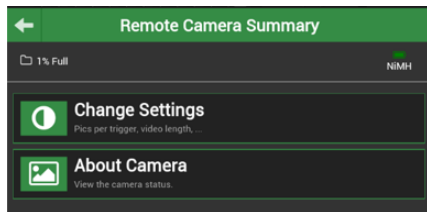
- Change Settings will allow you to update any Motion, Time Lapse, Pictures, Videos, Display, and Other settings.

- Simply modify the settings that you want, tap *Save* changes, and then tap the Upload button.

- The new camera settings will be applied the next time the camera connects to the network (i.e. Motion event, Time Lapse, or Daily status update).

TIP: It may be useful to have an hourly Time Lapse interval to ensure that new settings are applied sooner rather than waiting for the Daily Status or a Motion Event.

Mounting Your Camera

The camera can be mounted to a tree by using the included Universal Camera Mount (shown below). Simply screw the mount into a tree or post and then install the camera using the threaded insert. Loosen the ball mount to adjust the camera aim. For added security, our MicroFire™ Security Enclosure can be used with a Python™ Cable Lock by MasterLock®.

Visit our website www.reconyx.com for other options for mounting and securing your camera.

Mounting Camera with Universal Camera Mount (included)

We recommend that you mount your camera at a height of approximately 4 feet or higher. This height is optimal for detecting animals in the field of view of the camera as well as for accessing the camera's card and batteries.

*NOTE***:** It is highly recommended that you use a theft deterrent device such as a Security Enclosure and a lock to help secure your camera against possible theft when it is in the field.

TIP: Be sure to enable the Codeloc™ feature on your camera for additional security.

Aiming Your Camera

PIR Motion Detector

The Passive Infrared Motion Detector on your MicroFire™ camera is precisely aligned with the camera lens to give you the best chance of capturing subjects that come into the field of view of the camera, while not capturing pictures of anything that is not in the view of the camera.

The motion detector can detect movement up to 50 feet away. However, the detection range is dependent on the temperature of the source in relation to the ambient air temperature.

For the camera to take a picture two things need to happen:

1) An object (typically an animal) with a temperature different from the background temperature must be present within one of the detection bands. (I.e. something warmer or colder than the ambient temperature).
2) That object (i.e. something with a different temperature) must be moving into or out of the motion detection zones.

Motion Sensor Test Mode

Learning to use the WalkTest mode is critical to being as successful as possible with your RECONYX® camera. The WalkTest mode allows you to precisely determine your camera's active motion detection zones – ensuring your camera is aimed exactly where you want to capture animal activity.

1) Secure the camera to a tree or other object aiming the camera toward where you want it to capture pictures.

2) Using the RECONYX® Mobile App, select "CHECK AIM" to put camera in **Motion Sensor Test** mode.

3) Walk in front of the camera where you expect to capture pictures. Every time the green WalkTest light blinks it indicates that a motion event is taking place. If the WalkTest light does not blink where you expect it to, adjust the aim or location of the camera.

4) If possible, set up the camera so that no large trees or objects are in the main field of view of the camera, as they can adversely affect motion detection as well as night time flash range.

NOTE: All RECONYX™ cameras will self-arm from the WalkTest mode after a two minute period during which it does not detect any motion events.

Aiming your MS7 Security Camera for License Plate Capture

The MS7 is designed to capture license plates effectively during both daytime and nighttime when run in default mode.

For best results…

- Position the camera approximately 5 to 10 feet from the edge of the road looking at the back end of cars passing in the close lane.
- Cars should be travelling at no more than 50 miles per hour if you want to reliably capture plates.
- The camera should be mounted about 24-30 inches high and have it aimed approximately 30 degrees off of parallel. The diagram on the next page shows how you should set-up your camera.


Mount camera…
- at 30 degree angle to roadway
- 30 to 50 feet from subject

MS7
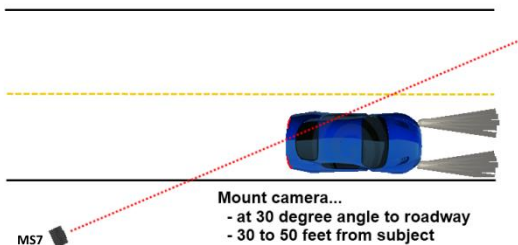
NOTE: The night-time illumination range of the MS7 is 50 feet.

NOTE: The camera may also be mounted higher up on a pole (~10 feet) since most people do not often look up and therefore are less likely to notice the camera if it's mounted above eye level. However, wake-up time and the number of photos per vehicle may be reduced when mounted in this manner.

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Plate Visibility at Various Distances

When setting up your MS7, be aware that the further the camera is positioned from the subject, the smaller the plate will appear within the picture. Also keep in mind that the night-time illumination range is up to 50 feet.

 = 30 feet

 = 50 feet

 = 70 feet
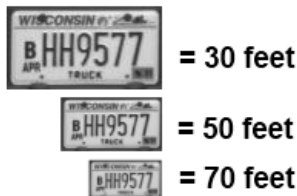
TIP: *Use the "Walktest" mode to be sure the camera is aimed correctly. After setting your camera up, it is best to drive by yourself at various speeds to see how your camera will react to a moving vehicle. You may find that you need to adjust your aim slightly after testing.*

TIP: *We also offer a modified Cable Box for use in camouflaging your camera in urban/suburban settings when setting up to capture license plates.*

External Power Connection

All MicroFire™ cameras include an External Power Connector and Cable. This allows you to connect the Camera to a 12 volt DC 4 amp power supply of your choosing. Connecting to the correct power supply is your responsibility! Any damage caused by connecting to an incorrect power source is not covered under the warranty. If you have any questions, please contact our Technical Service department support@reconyx.com.

Image Data Information

Your RECONYX® MicroFire™ camera stores Image Data in every picture it takes. Some of this information is displayed on the Image Data bands above and below the image.

- An **M** or **T** in the top data band indicates a "motion" or "time-lapse" event.
- "**1/3**" indicates the first in a sequence of three pictures for that event.
- Moon Phases displayed include:
  - ● (new moon)
  - ◐ (waxing crescent)
  - ◑ (first quarter)
  - ◒ (waxing gibbous)
  - ◯ (full moon)
  - ◓ (waning gibbous)
  - ◔ (last quarter)
  - ● (waning crescent).
- The "Illumination" ⚡ indicator appears in the Image Data bands when the illuminator (flash) is used.

Troubleshooting

For answers to questions about your RECONYX™ MicroFire™ camera that you cannot find in this *Instruction Manual*, please contact RECONYX™ Technical Support at support@reconyx.com or call 1-866-493-6064.

Firmware Updates

You may see updates available in the RECONYX® Mobile App to update your camera's firmware. We periodically release firmware updates with new features and/or performance enhancements. Updating firmware on the MicroFire™ Series cameras takes just a few seconds and is well worth the effort to ensure your camera is performing at the highest level possible.

Limited Night Time Range

If your nighttime range is less than expected, check to be sure your batteries are new or fully charged. NiMH rechargeable batteries or Energizer® 1.5V AA Ultimate Lithium™ batteries are the only power source approved for RECONYX® cameras. Alkaline batteries cannot deliver enough amperage to power the illuminator consistently at night and are not recommended.

The physical camera setup is also important in getting good nighttime images. If you aim the camera out over an open field where there is nothing within range to reflect the Infrared energy back toward the camera, the images will appear very dark (like shining a flashlight into the night sky). The best nighttime images will be captured when you have a backdrop of some sort that will reflect energy back toward the camera (e.g. trees, tall grass, fence, building, hillside, etc).

Focus Problems

If your images appear cloudy or out of focus*, first consider whether there was condensation or frost on the camera windows; you may wish to check your camera after a fresh snowfall to be sure the windows are not covered with snow. Next, check the windows for dirt and water spots, and gently clean them with a clean soft cloth and glass cleaner or water. Image clarity can also be adversely affected by very high temperatures, so it is a good idea to mount your camera where it will not be getting direct sunlight during the heat of the day.*

False Triggers

If you seem to be getting false triggers (i.e. the camera is taking pictures of nothing); first, restore your camera back to the Default settings and try your camera again. This will ensure that you are running with known settings – with the motion detector ON at HIGH sensitivity and with Time-Lapse OFF.

If after going back to the Default settings, you still seem to be getting false triggers, check the physical setup of your camera. The sun should not be shining directly on the face of the camera, and the camera's field of view should be cleared of as much vegetation as possible. False triggers most occur most on sunny, breezy days. Vegetation will soak up the sun's energy and it will become warmer than the ambient air temperature. When the wind moves the vegetation, the camera detects this and cannot distinguish it from a warm-blooded animal moving through the scene. For this reason, careful placement and setup of your camera helps prevent false triggers.

Only as a LAST resort should you turn down your camera's motion sensitivity; this reduces your ability to detect movement of warm-blooded animals, especially during the summer.

Camera Not Triggering as Expected

First, restore the camera back to Default settings and try your camera again. This will ensure that you are running with known settings – it will set the motion detector ON at HIGH sensitivity. This is important, especially in the warmer months, because as the background temperature approaches the temperature of the subjects, the strength of the signal decreases and the range goes down accordingly.

If you are still having trouble, please refer to the *"Mounting and Aiming Your Camera"* section for detailed information, as well as using the WalkTest mode.

It is important to keep in mind that there are other factors that can also affect the ability of your camera to detect motion. Wind can have a detrimental effect. Body heat from a subject can be quickly dispersed on a breezy day, making it more difficult for the camera to detect heat in motion. Also movement directly toward and away from the camera is less likely to trigger the camera than side-to-side movement. And, finally, if a subject is moving very slowly, it will sometimes not produce a strong enough signal within the sensor to trigger the camera.

Memory Card Problems

If you have issues, you may want to try a different brand of memory card. We have found that some of the less expensive memory cards are very slow and do not always run well (even if they are advertised as fast). RECONYX® certified memory cards are available at www.reconyx.com .

Cold Weather Problems

If your camera shuts down in the cold, it may be too cold for the batteries to operate reliably. Refer to the "Battery Specifications" section for recommended battery types.

Battery Life Less than Expected

NiMH batteries have decreased life in hot and cold weather. They will run the camera, but they will have decreased run time. It is not unusual to see battery life drop off 50% or more when daytime temperatures near 90˚ Fahrenheit or higher. This will not damage your NiMH batteries; but they will discharge at a faster rate.

Other Questions?

If you have read this manual and checked our web site, and you still need assistance, please contact our Technical Support Department at 866-493-6064 or e-mail support@reconyx.com.

Warranty, FCC, CE, IC and Safety Information

RECONYX® Limited Hardware Warranty

RECONYX® MicroFire™ cameras are warranted against manufacturers defects in materials and workmanship for a period of five years from the date of purchase. If during this period, through normal use, the product fails due to defects in materials or workmanship, RECONYX™ will either repair or replace the product at our discretion.

Repair or Replacement

Buyer must obtain a Return Authorization (RA) number from RECONYX® before returning any product(s) for repair or replacement. If RECONYX® concludes that a returned product is not defective, Buyer will be notified, the product will be returned to Buyer at Buyer's expense, and Buyer may be charged for examination and testing of the product.

This limited warranty is the sole warranty for hardware and software products offered by RECONYX® and RECONYX® shall not be liable for any amounts for said products except in compliance with this warranty.

FCC CE Certification

This device complies with part 15 of the FCC Rules. Operation is subject to the following conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. The Reconyx, Inc. MicroFire Digital Trail Camera has been tested and found to comply with the emissions requirements of IEC 61000-6-3 and the immunity requirements of IEC 61000-6-1. Reconyx, Inc. MicroFire Digital Trail Camera has been tested and found to comply with the radiated interference requirements of Section 6.2 of the Industry Canada ICES-003 for Class B Information Technology Equipment (ITE). In some rare cases where the camera is exposed to a +8kV ESD pulse, a manual reset (turn camera OFF, wait 10 seconds, turn camera ON) may be required to resume operation.

Safety Precautions

Before using the camera, please ensure that you read and understand the following safety precautions. Always ensure that the camera is operated correctly. The safety precautions noted in this guide are intended to instruct you in the safe and correct operation of the camera and its accessories to prevent injuries or damage to yourself, other persons, and equipment.

Preventing Malfunction

Avoid Strong Magnetic Fields

Never place the camera in close proximity to electric motors or other equipment generating strong electromagnetic fields. Exposure to strong magnetic fields may cause malfunctions or corrupt image data.

Avoid Condensation

Moving the camera rapidly between hot and cold temperatures may cause condensation (water droplets) to form on its external and internal surfaces. You can avoid this by placing the camera in an airtight, plastic bag and letting it adjust to temperature changes slowly before removing it from the bag.

If Condensation Forms Inside the Camera

Stop using the camera immediately if you detect condensation inside the camera. Continued use may damage the camera. Remove the memory card and batteries from the camera and wait until the moisture evaporates completely before resuming use.

Warnings

- Store this equipment out of the reach of children and infants.

- Do not allow water or other liquids to enter the interior of the camera. The interior has not been waterproofed. If the exterior comes into contact with liquids or salt air, wipe it dry with a soft, absorbent cloth. In the event that water or other foreign substances enter the interior, immediately turn the camera's power off and remove the camera batteries and memory card.

- Use of power sources not expressly recommended for this equipment may lead to overheating, fire, electrical shock, or other hazards.

- Do not short-circuit the battery terminals with metallic objects, such as key holders. It could lead to overheating, burns, and other injuries.

- Avoid using, placing, or storing the equipment in places subject to strong sunlight or high temperatures, such as the dashboard or trunk (boot) of a car. Exposure to intense sunlight and heat may cause the batteries to leak, overheat or explode, resulting in fire, burns or other injuries. High temperatures may also cause deformation of the casing.

- When using desiccant, the following precautions should be followed: Keep desiccant out of reach of children. Desiccant may cause eye or skin irritation; seek medical assistance for further treatment,

- Check your state/local laws concerning the use of this product.

Maintenance and Off Season Storage

- Clean the face of the camera as necessary to ensure the best performance. A basic glass, or anti fog optics cleaner can be applied to all of the windows and wiped away using a lint-free cloth.

- It is recommended that you leave the camera open in a warm, dry place for a period of time to remove any existing moisture or condensation that may be present. Long term storage in a dry environment is recommended.

- ****NiMH batteries will self-discharge even when not in use**. To ensure longevity, fully charge the batteries and store them in the refrigerator, as cool temperatures slow the self-discharge rate.

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