



HYPERFIRE™
HIGH PERFORMANCE CAMERAS
Cellular Camera Manual



4G LTE

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Table of Contents

I.	Table of Contents	1
II.	Cellular Overview	2
III.	Programming Your Cellular Camera.....	3
IV.	Setting up your Cellular Account.....	7
V.	Using your Cellular Camera	8
VI.	Battery and Power Specifications and Installation	13
VII.	Monitoring and Managing Cellular Photos	15
VIII.	Troubleshooting	16
IX.	Your Information and Camera Warranty Registration	18
X.	Copyright & Trademark Information.....	19



Cellular Overview

The RECONYX® HyperFire™ Series Cellular Camera will allow your camera to send photos over a wireless cellular network via email or as an MMS to your phone depending on the wireless carrier you are using.

The images are transmitted in near real-time after a sequence of images are captured.

Other things you will need before using your camera:

- Secure Digital® (SD or SDHC) Memory Card
 - 12 AA Batteries
NOTE: *The SC950C and SM750C cameras must be run on either Energizer® 1.5V AA Ultimate Lithium batteries or NiMH rechargeable batteries. There is also an External Power Jack available. This can be used with the Solar Panel Power Unit (available at www.reconyx.com) or other 12v external power source.*
 - Windows® PC to install and run the RECONYX® “Security Settings” software to program your cellular camera.
 - Activating your camera on your chosen carrier will vary depending on the carrier. We have included a separate addendum for either Verizon or AT&T regarding how to activate with each carrier.
-

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**.

Programming Your Cellular Camera

Software

In order to program your cellular camera, you will need to install the software to program your cellular camera. With both the Security and Professional Series cameras you will need to install and run the “**Settings**” software for your camera.

TIP: Download Security Camera software at:
www.reconyx.com/software/security-settings

Download Professional Camera software at:
www.reconyx.com/software/pro-settings

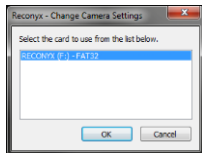
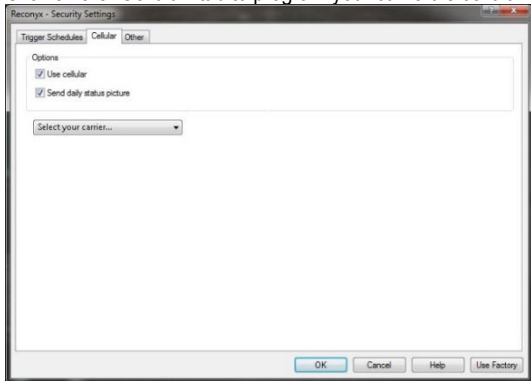


Running the Settings Software

To program the camera, you will need to insert an SD card in the computer and then click on the “Security Settings” program icon on the desktop.

Select the SD card you would like to save the settings to and click “OK” to start the program.

Click on the “Cellular” tab to program your camera’s cellular modem:



Cellular Programming Options

Use Cellular: Be sure this is “Checked” if you want to send photos.

NOTE: This option can also be turned ON/OFF on the camera.

Send daily status picture: This will automatically program the camera to send a daily status picture between 12:00pm and 12:30pm. We recommend you leave this box checked. Then you will get at least one picture a day even if nothing triggers the camera.

The current battery percentage, memory card status and number of pictures taken, will also be sent.

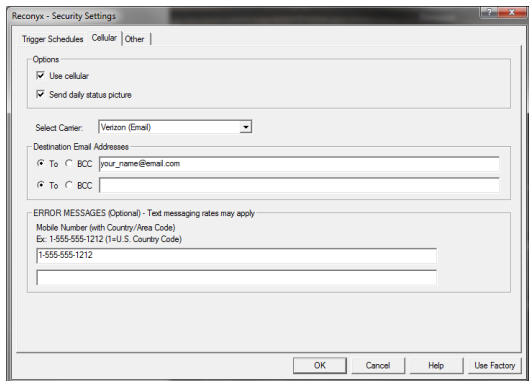
The status picture will verify that the camera is running, positioned as you left it, and allow you to check the battery level and memory card space available.

The status picture that is sent will be marked with an “S” (status) to the right of the Date/Time Stamp. **2013-01-03 12:00:01 PM S**

Motion photos are marked with an “M”; Timelapse photos are marked with a “T”.

Select your carrier...: Select which carrier corresponds to your camera from the dropdown list.

This will allow you to input where and how the photos will be delivered.



The screenshot shows the 'Reconyx - Security Settings' dialog box with the 'Cellular' tab selected. The 'Options' section has two checked items: 'Use cellular' and 'Send daily status picture'. The 'Select Carrier:' dropdown menu is set to 'Verizon (Email)'. The 'Destination Email Addresses' section has two rows, each with a radio button for 'To' and a 'BCC' label, followed by an input field containing 'your_name@email.com'. The 'ERROR MESSAGES (Optional) - Text messaging rates may apply' section has a label 'Mobile Number (with Country/Area Code)' and an example 'Ex: 1-555-555-1212 (1=U.S. Country Code)', with an input field containing '1-555-555-1212'. At the bottom are buttons for 'OK', 'Cancel', 'Help', and 'Use Factory'.

Destination Phone Numbers and Email Addresses:

If you have an **MMS enabled camera**; you will be able to select up to four phone numbers and two email addresses can be programmed into the camera.

If you have a **DATA enabled camera** you will have up to two email addresses where the photos will be delivered.

Select the appropriate “To” or “BCC” radio button for each email address. The “BCC” (Blind Carbon Copy) will not allow the other contacts to see that the camera is sending the photo to the BCC email address.

NOTE: For security reasons, all email addresses must be programmed using the Security Settings software.

The email addresses are not visible or editable on the camera itself.

When you have finished entering the destination email addresses, press the OK button. This will save the information to your SD Card.

Error Messages (Optional):

Up to two cell phone numbers can also be programmed into the camera so that if it cannot send a photo due to poor signal strength, it will attempt to send an SMS text message letting you know it took a photo but could not send it. Standard text messaging rates will apply.

The SMS text message from the camera would read:
“FAILED TO SEND IMG_0002.JPG”

Text messages can often be sent even when a picture cannot be sent as a result of a poor signal. In these cases (where signal strength is marginal), you will at least be made aware that the camera reacted to a motion event within its field of view and did record images of the event. All images are still saved to the SD card even if nothing could be sent.

NOTE: For security reasons, all contacts must be programmed using the Security Settings software.

The contacts are not visible or editable on the camera itself.

NOTE: A list of all possible error messages that your camera might send you appears later in this manual.

Upload Security Settings from PC to the Camera

Once the SD Card has been programmed using your PC, a file named “Schedule.cfg” is created inside the “RECONYX” folder on the SD card.

Remove the SD card from your PC and...

1. Be sure your camera is turned “OFF”.
2. Insert the SD card into your camera.
3. Flip the power switch to the “ON” position.

When you turn on the camera, the backlit LCD will display “Reading Card” then “Saved PC Options” as it uploads the settings to the camera. The Security Settings information have been read from the SD card and applied to the camera.



Once this step is complete, the file (Schedule.cfg) is erased from the SD card.

NOTE: The settings will be retained even after the camera is powered OFF.

NOTE: Selecting the “Use Default Settings” option on the camera will restore all factory settings EXCEPT the cellular settings.
(i.e. email addresses and phone numbers will remain programmed in the cameras settings until a new configuration file is uploaded to the camera.)

Setting up your Cellular Account

After your camera has been programmed, and before you deploy it to the field, you will have to set up an account with the cellular provider specific to the camera. The provider name is printed on the label inside your camera.

To setup your account, you will need two pieces of information.

1. SIM Card ICCID
2. IMEI Number

For your convenience, we have printed the Cellular Provider name, SIM Card ICCID number and Modem IMEI numbers on the inside (top) of your camera (see photo at right).



TIP: There is also space provided on the back page of this manual to record these numbers.

NOTE: Please refer to the included addendum (or contact your RECONYX dealer) for details on setting up an account with your chosen provider.

Record your Phone Number

Once you have been assigned a phone number there is a label on the inside of the camera to record the number.

There is also a section on the last page of this manual to record your mobile number.



Using your Cellular Camera

Now that you have set up your account and have programmed your camera, it's time to set up the camera the way you would like to use it. You have many options for programming your camera's behavior; all of which are covered in the camera user manual. Here we will give you a few tips for optimal results when using your cellular camera.

Check Signal Strength

When you deploy your cellular camera, you will want to check the signal strength in the location where you wish to mount the camera. To do this, find “**Check Cellular**” in the main menu of the camera (arrow to the right until you find this option and then press the OK button). The camera will then connect to the network and report to you the signal strength. For optimal performance, mount the camera at a location where you get the strongest signal.



NOTE: The “Check Cellular” option is only available if the camera has been provisioned and programmed with an email address.
(If the camera does not have an email address programmed; the “Check Cellular” option will not show up.)

On Camera Error Messages

When using the camera, or when selecting the “Check Cellular” option, there are a few error messages that the camera may report on the LCD display. Including:

NO SIGNAL	= No signal from tower or no data service available
NO SERVICE	= Unable to connect to a tower
MODEM ERROR	= Modem fails to power up, or hardware failure
NO DATA SERVICE	= Account issue, or signal weak/dropped
NO IP CONNECTION	= Network issue, email server issue, or signal dropped
WEAK SIGNAL	= Signal is < -101dBm
EMAIL ERROR	= Email server issue, or signal weak/dropped
FAILED TO SEND	= Error occurred during image transmission

Signal Strength Explained

Once a connection to the network is found the camera will display the carrier it is connected to, as well as the type of data connection (4G, 3G, 1X). The dBm rating will also be displayed and will change depending on the signal strength.

The table below shows approximate values to be used as a guide, and may vary depending on the carrier used:

Less than -113	= Signal Strength is too weak
-112 to -102 dBm	= Camera will attempt to send error SMS
-101 to -91 dBm	= Marginal Signal – should send email, may take longer
-90 to -81 dBm	= Acceptable Signal
-80 to -71 dBm	= Good Signal
Over -70 dBm	= Excellent Signal

Sending Pictures

When the camera is triggered it will take the number of photos specified in the trigger settings. Once the sequence is finished the camera will then connect to the network and send the photos from that sequence in an email.

Due to network delays and email processing, emails may be received out of order. Please refer to the time/date stamp on the actual photo to determine the order in which they were taken.

The SM750 (License Plate Capture Camera) will send full resolution photos. All other cameras will have the photos downsized to 512x384 when they are sent. The full resolution photos are saved locally on the SD card.



NOTE: While the camera is sending photos, it can NOT take photos.

NOTE: It is possible to set up the camera to take more photos than the cellular buffer can store (approx 10 photos). Once the buffer is full, the photos will be sent and then the trigger sequence will continue.

Error Messages from Camera

The camera is programmed so that if it cannot send a photo due to poor signal strength, it will attempt to send a text message letting you know it took a photo but could not send it.

*An error text message may look like this: “**FAILED TO SEND IMG_1234.JPG**”*

Text messages can often be sent even when a picture cannot be sent as a result of a poor signal. In these cases (where signal strength is marginal), you will at least be made aware that the camera reacted to a motion event within its field of view and did record images of the event. All images are still saved to the SD card even if nothing could be sent.

Standard text messaging rates will apply.

Error Text Messages

If the camera encounters an error when attempting to send a photo, it will attempt to send a text message letting you know what the error was (if this option was selected in the Security Settings software).

NO DATA SERVICE	= Account issue, or signal weak/dropped
NO IP CONNECTION	= Network issue, email server issue, or signal dropped
WEAK SIGNAL	= Signal is < -101dBm
EMAIL ERROR	= Email server issue, or signal weak/dropped
FAILED TO SEND	= Error occurred during image transmission

Carrier Text Message Notifications

When you set up an account on-line, the carrier will often send a text message with your password to your new phone number (your camera). The camera will automatically forward any text messages it receives to the contacts you specify when you set it up.

The camera will check for incoming messages every time it connects to the network to send images. So if you need to get your account setup password text fairly quickly, you will want to turn the camera on, arm it, and then trigger it to take and send you some photos. At the same time it sends the photos, it will forward any text messages that are queued up for that phone number.



NOTE: Cell phone carriers do recycle phone numbers, so you may see text messages coming through (being forwarded) that have obviously been written for someone else.

NOTE: Some plans (including prepaid) will not send SMS text messages.

Message Count

If the camera is setup to send a message to more than one phone number or email address, each email and phone number will count as one text; (e.g. two phone numbers and one email address, will count as THREE text messages for each photo sent).

If you are sending messages to multiple recipients we highly recommend you set up an unlimited messaging plan for each cellular camera.

Email Setup

You may wish to have a dedicated email account to monitor photos sent from your camera(s).

You can use the RECONYX® Mobile Desktop Application to monitor the account without having to go to the account or have a browser window open.

There are numerous free email accounts available online such as Gmail® and Yahoo!® Mail.

Choosing Camera Settings for Security Use

License Plate Capture

If you are using an **SM750 (License Plate Capture Camera)**, we recommend that you use it on default settings. The camera will take 5 pictures as fast as it can when it is triggered. This is usually a perfect setting for capturing a license plate of a vehicle that has just driven by the camera.



See the Security Camera User Guide for instructions on optimal aiming of the SM750.

General Surveillance

If you are using the camera for general surveillance, we recommend you set the camera to take 5 or 10 photos with a 3, 5 or 10 second delay between photos. This will allow the camera to record 5 or 10 photos over a 15 to 100 second time period before it sends the series. The reason we recommend this is that while the camera is sending photos, it will not be taking photos.



Assuming you are using the cell camera for security, you will want to have a good idea of what triggered the camera and what activity is going on before you take action. If you were to leave the camera on its default settings (3 pictures 1 second apart), you may not see enough in those 3 quick photos to get a good sense for what is happening in front of the camera. If something more interesting or incriminating happens while the camera is sending photos, you will miss it.

Since every situation is different you will need to think through your particular scenario and decide which settings are optimal for your application.

NOTE: While the camera is sending photos, it can **NOT** take photos.

Battery and Power Specifications and Installation

Your RECONYX® HyperFire™ camera runs on twelve AA-cell batteries. We highly recommend using either Energizer® Ultimate Lithium batteries or high-quality NiMH Rechargeable batteries. You should NOT use alkaline batteries as they do not provide as much power as Lithium or NiMH batteries and are adversely affected by both hot and cold weather.

External Power Jack

The Cellular Upgrade also includes a water-tight External Power Jack that is located on the bottom of your camera. You will need to have clearance on the bottom of your camera for the included power cable (our mounting systems and security enclosures are perfect for this).

The cable has pig-tails on the end so you can connect the red wire to the positive (+) side of a battery or other external power source and the black wire to the negative (-) side (ground). Connecting to anything higher than 18 volts could damage your camera and will void your warranty.

We highly recommend having a fresh set of Energizer® Ultimate Lithium batteries installed in the camera even when running with external power.

By having both internal and external power sources available, the camera will decide which power source to use based on which has the greater voltage; thereby avoiding a camera shutdown due to an external power failure.

When using the external power the ON/OFF switch should be in the “ON” position.

Input power supply should be able to deliver 4 amps of current at 12 volts.

TIP: *The **Solar Panel Power Unit** available at www.reconyx.com is an ideal solution to power your cellular camera via the external power jack.*

NOTE: Be sure to load batteries in the proper orientation (alternating positive/negative, six in each battery bay).

NOTE: The external power connection is totally independent of the internal batteries, and **DOES NOT** deliver a charge to the batteries; even if rechargeable batteries are used internally.



Battery Performance

Because camera settings, subject activity, individual battery performance and temperature all vary, there is no way to precisely predict a camera's run time, the total number of images that can be taken, or the temperature at which the camera will operate on any given set of batteries. Therefore the following table shows approximate values to be used as a guide in determining what type of batteries will best suit your needs.

If your Camera is in an area where it is not seeing a lot of activity and subsequently is not sending a lot of photos, it may run for 6 months or more. Run time is very heavily impacted by how many pictures are taken and sent.

NOTE: The values in the chart below were based on taking 50% daytime photos and 50% nighttime photos at 70°F.

<u>Battery Type</u>	<u>Operating Temperature</u>	<u>Number of Images</u>
AA Energizer Ultimate Lithium (1.5V)	-40° F (-40°C) and above	2,000 to 5,000
AA Rechargeable Nickel-Metal Hydride (1.2V, 2600mAh)	0° F (-18°C) and above	* 1,000 to 3,000

**** High and low temperatures can reduce run time of NiMH batteries by 50% or more.***

NOTE: Battery life can vary greatly depending on signal strength.

TIP: You can purchase 1.5V Lithium batteries as well as RECONYX® certified NiMH rechargeable batteries and chargers at www.reconyx.com.

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

Monitoring and Managing Cellular Photos

Depending on your application and number of cameras deployed, it can be difficult to monitor all of your images. RECONYX® has developed a program to help you monitor and manage your images as they are delivered to your email account.

NOTE: This program is **not required** to receive photos from your camera.

RECONYX® Mobile for Desktop

RECONYX® Mobile Desktop is a Windows application that helps to organize and store your pictures sent from your camera:

- It automatically monitors your email account for any incoming messages from your cellular camera.
- It instantly notifies you as new images arrive. No need to check your email every few minutes to look for images.
- New images are instantly displayed in a popup window on your PC. This popup displays the most recent image so that you can determine whether it requires further investigation.
- It provides access to additional data taken with the image, such as battery voltage, temperature, and so on.
- Each camera's images are automatically downloaded and saved to individual folders on your PC. The images are saved into the default location where MapView keeps its images. This way you can easily tie a camera's images to a location on a map within MapView. You will want to explore the mapping features built into MapView for this purpose. This allows you to access them at any time and quickly browse through an image sequence without having to find and re-open old emails.



Download Link: www.reconyx.com/software/mobile/desktop

Troubleshooting

No Photos Sent: If after setting up your account and programming your camera, it does not send you any photos:

- Check to be sure you have adequate signal strength using the “Check Cellular” option onboard the camera.
- Make sure that the account is setup properly. The camera should be setup as a “Connected Device” with an appropriate data plan. New accounts can take up to 2 hours to be active.
- Verizon account and billing issues, contact customer support at: **(800) 922-0204**

Error Messages: If you are getting inconsistent results (i.e. a lot of error messages being sent instead of pictures), it is most likely due to poor signal in the location where the camera has been deployed. There is not much you can do about this other than trying to relocate the camera to another location. Sometimes moving the camera just a few feet can make a significant difference in signal strength. You can check the signal strength using the “Check Cellular” option from the main menu.

Less Reliable over Time: If your cellular camera seems to become less reliable over time, and you are getting more messages saying there was an error sending photos, it could be because the batteries are getting weak. Sending images via the network takes a good deal of power and weak batteries can result in a less robust connection for sending images.

On a related note, your cellular camera has also been equipped with an external power jack and cable. If you have an external 12 volt DC power source, you can plug it into the camera. The camera and modem will run off of the external power as long as the voltage is above 10 volts. If and when the external voltage drops to about 10 volts or less, the camera will automatically switch to draw from the internal batteries.

Other Questions: If you have followed all the steps in this guide and are still having trouble, please call our Technical Support team at **(866) 493-6064**.

Or send an email to support@reconyx.com.

Disclaimers: Any attempt to modify the camera from its original configuration will void the warranty.

Safety Precautions

Before using the camera, please ensure that you read and understand the following safety precautions. 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. Always ensure that the camera is operated in conformance with these user instructions.

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

- Do not allow water or other liquids to enter the interior of the camera. 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.
- 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.
- Check your state/local laws concerning the use of this product.

Your Information and Camera Warranty Registration

Record Your Information

After you have familiarized yourself with this instruction manual, your camera, and software, you should record some basic information here so that you don't lose it. It is also a good idea to keep your purchase receipt in case you would need warranty work done on your camera.

IMEI Number: _____

ICCID (SIM) Number: _____

Phone Number: _____

Cellular Carrier Username: _____

Cellular Carrier Password/PIN: _____

Camera Serial #: _____

CodeLoc™ Password: _____

Register your Camera

Save A Stamp! Register Your HyperFire™ camera online today at www.reconyx.com/register

RECONYX, Inc.
3828 Creekside Lane
Holmen, WI 54636

Or by sending in the information to:

RECONYX® HyperFire™ Warranty Registration

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone: _____

Email: _____

Camera Model: _____

Serial Number: _____

Date Purchased: _____

Retailer: _____

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