



HYPERFIRE 2™

Cellular Security

4G LTE Camera Manual



HS2X – General Surveillance
HL2X – License Plate Capture

Copyright: March 2021

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Cellular Camera Overview

Congratulations on purchasing a RECONYX® camera. RECONYX® has been the leader in digital security cameras since 2002. Your HyperFire 2™ camera is a state-of-the-art digital camera with a Passive Infrared (PIR) motion detector and a night-time infrared illuminator; all contained in a secure, rugged and weather-resistant case.

The simplest and best way to use the RECONYX® HyperFire2™ Series Cellular Camera is to sign up with the RECONYX® Cell Plan. Download and install the RECONYX® Connect™ app from Google Play or the Apple App Store.

You can setup and manage your account, view your photos, change settings, see your camera status, & request a photo, all from the Connect™ app.

If for some reason you cannot use the Connect™ app, you can send photos via email direct from the camera. This setup requires you install your own SIM card and run separate software on a Windows PC to configure your camera. Images sent in this manner are not stored in your RECONYX® cloud account and are not accessible from the Connect™ app.

Other things you will need before using your camera:

- Secure Digital® (SD, SDHC or SDXC) Memory Card (up to 512GB)
- 12 AA Batteries (Or SC10 Solar Charger)
***NOTE:** RECONYX® cameras should only be powered with either Energizer® AA Ultimate Lithium batteries or NiMH rechargeable batteries. There is also an External Power Jack installed. This can be used with our SC10 Solar Charger (available at www.reconyx.com) or other 12v external power source.*
- Android or iOS device to run the RECONYX® Connect™ app to setup your account, view your photos, and program your cellular camera.
- Activating your camera is done through the RECONYX® Connect™ app.

Contents of this package:

- HyperFire 2™ Camera
- Antenna Subassembly
- Adjustable Webbing Strap for mounting camera
- Power Cable
- This instruction manual

HyperFire 2™ Specifications

	HS2XC	HL2XC
Purpose	General Surveillance	License Plate Capture
Illumination Range at night	No-glow Covert Infrared up to 150 feet	No-glow Covert Infrared up to 70 feet for License Plates
Images	3 MP or 1080p HD color images by day; monochrome images by night	720p widescreen or standard color images by day; monochrome by night
InstaOn™ Trigger Speed	1/5 second	1/5 second
RapidFire™ NearVideo™	Up to 2 frames per second	Up to 3 frames per second
Video with Audio	720p 20 fps	720p wide or std 5 fps
Loop Recording	Available option: Continuous recording. Older pictures/videos overwritten by new ones.	
SD Card Capacity	Up to 512GB: (4GB = approx 10,000 pictures)	Up to 512GB: (4GB = approx 20,000 pictures)
Software Included	RECONYX® Connect™	
Moisture Absorbing Desiccant System	Available for purchase	
Time-Lapse Surveillance	5, 15 or 30 seconds or 1, 5, 15, 30, or 60 minute intervals	
Time-Lapse and Motion Sensor Scheduling	Clock based (Fixed) and Solar schedules available. Schedules can also be assigned to different days of the week. (i.e. different weekday schedule from weekend schedule).	
Power Options	12v External Power Jack, SC10 Solar Charger, AC/DC Power Supply	
Warranty	5 years	

Get Started

- 1) Attach the antenna subassembly onto the front of the camera by hand.
Do not over-tighten!
- 2) Install (12) AA Batteries – or plug in your SC10 Solar Charger or other external power source.
(We recommend Energizer Ultimate Lithium or Tenergy NiMH).
- 3) Install the SD Card. (We recommend SanDisk).
- 4) Download the “RECONYX CONNECT” App from your App Store.
- 5) Follow the directions in the RECONYX CONNECT App to...
 - Setup your account
 - “Add” your camera(s)
 - Enter billing information
 - Receive photos
 - Program your camera

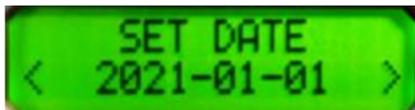
NOTE: If you have any questions or concerns relating to the operation or functionality of your camera, please contact our Technical Service Department by email at support@reconyx.com or by calling toll free [866-493-6064](tel:866-493-6064).

App Install and Setup

Initial Setup

Before you power your camera on for the first time, it is helpful to have the Reconyx Connect App installed on your mobile device. On the mobile device, you will touch “Add Camera”. Then you should follow the on-screen instructions for adding a camera. It will tell you to go through the setup wizard on your camera. To do this, you will want to power up the camera with an SD card inserted.

If this is the first time you’ve used your camera, it will take you through a setup wizard to help you with initial setup. It will start by asking you to set the date.



Use the up and down buttons to change numbers and the right and left buttons to scroll through settings for year, month and date. The OK button will take you to the Set Time screen. Proceed through the setup wizard until setup is complete. At the end of the setup wizard, you will be able to “Pair” the camera with your App.

Install the RECONYX® Connect™ app from Google Play for Android or the Apple App Store for iOS.

Once the App is installed you will be prompted to:

1. Setup your account
2. Add/Pair your camera(s) with your device
3. Add your billing information
4. Setup optional Image or Data Cost caps
5. Decide what other optional services you would like to include, e.g. Real-Time Access.

Once you have gone through these steps your camera is ready to be deployed and start sending you images.



RECONYX® Cellular Plan

RECONYX® is your one-stop shop for your camera and cell plan.

There is no need to contact a cell carrier for activation or billing and no need to guess which plan option is best for you. Everything is handled directly through the RECONYX® Connect™ app. Just open the app and tap the Add Camera button to get started. Within minutes you'll be up and running. From there you can manage your cameras, view your images and monitor your bill all from the same place!

NOTE: For the most current pricing and options go to www.reconyx.com .

Cellular Access Plan

Monthly access is per camera and includes 200 mobile optimized images. Additional images are billed to your Shared Image plan.

The Cellular Access Plan includes: *Cloud Storage, Remote Access and Hibernate*

Cloud Storage

Images are stored in your secure cloud account and accessed with the RECONYX® Connect™ app. 1 GB of storage included (approximately 20,000 mobile optimized images).

NOTE: *Additional storage is available for purchase.*

Remote Access

Manage your camera remotely from the RECONYX® app:

- View and manage images
- Check camera status*
- Change camera settings*
- Fetch Full Resolution images*

NOTE: ** Remote Access functions will be performed the next time the camera connects to the network, which could be up to a day from when you make the request. Our REAL-TIME ACCESS feature allows for these functions to be performed immediately.*

Hibernate

You do not have to pay for cellular access when your camera is not in use. With the RECONYX® plan, you can hibernate each camera for up to 6 months per year with no cancellation or re-activation fees.

Your saved images are still accessible in the RECONYX® app.

NOTE: *When you wish to reactivate your camera, you will need to have your camera in hand and follow the onscreen instructions.*

NOTE: *Go to www.reconyx.com for current pricing and options.*

Additional Data

Additional image data is sold in Blocks of 2,000 mobile optimized images per month. Image blocks are shared across all RECONYX® cameras on your account.

NOTE: *Each Full Resolution image counts as 10 mobile optimized images.*

Real-Time Access

Optional upgrade for immediate 2-way communication with your camera from the RECONYX Connect app. Enhances standard remote camera access to include:

- Request camera to take and send an image right now
- Live Aim Mode: aids in mounting and positioning your camera
- Check camera status at any time
- Change camera settings without delay
- Fetch Full Resolution images immediately

NOTE: *Purchased on a per camera basis (for up to 100 requests per month).*

Controls & Parts Diagram



Batteries & Memory Cards

Accessing Batteries, Memory Card & Camera Controls

To install the batteries and memory card, open the latch on the right side of the camera by grasping behind the latch and flipping it toward the front. The camera will open like a book, allowing access to the batteries, memory card and settings.

Step 1



Step 2



Step 3



TIP: Each time you open your camera it's a good practice to:

- Make sure the main gasket is seated properly and is clear of debris.
- Be sure that the windows on the front of your camera are clean.
- Also be sure the latch is fully seated when closing your camera to ensure a weather-tight seal.

Battery and Power Specifications

Your RECONYX® HyperFire2™ Cellular 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

Your camera 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 pigtails on the end so you can connect the red wire to the positive (+) side and the black wire to the negative (-) side (ground) of a battery or other external power source.



Connecting to anything higher than 18 volts could damage your camera and will void your warranty.

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

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.

TIP: *The **SC10 Solar Charger** is available at www.reconyx.com and is an ideal solution to power your cellular camera via the external power jack.*

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.

Battery Type	Operating Temperature	Number of Images
AA Energizer Ultimate Lithium (1.5V)	-40° F (-40°C) and above	HL2XC: 4,000 to 9,000 HS2XC: 3,500 to 7,000
AA Rechargeable Nickel-Metal Hydride (1.2V, 2600mAh)	0° F (-18°C) and above	* 1,500 to 4,000

*** 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.

Secure Digital® (SD, SDHC, SDXC) Card Specifications

A Secure Digital (SD/SDHC/SDXC) card is used to store the pictures your camera captures. These images may be transferred to your computer using standard image viewing software or RECONYX® MapView™ mapping and image management software.

Insertion and Removal of the memory card

Make sure the orientation is correct and that the card is aligned properly. Push gently on the memory card as shown below until it clicks into place.

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.**



To remove memory cards:

- 1) Press <OK> to disarm the camera (the battery status and number of pictures taken since last armed will be displayed on the LCD).
- 2) Switch the power OFF.
- 3) Press and release the card to partially eject the memory card.
- 4) The card can then be removed by grasping it with your fingers.

NOTE: Always disarm the camera (by pressing OK) and switch the power off before removing or inserting the memory card.

Memory Card - File System Requirements

Secure Digital cards have various speeds and capacities. Larger capacity cards are capable of storing more images. Your HyperFire 2™ camera can accept cards up to 512 GB, but most users will find 32 GB cards to be more than adequate for normal use.

Cards with higher speed ratings are capable of reading and writing images faster. This is advantageous when taking RapidFire™ image sequences or videos.

NOTE: A 32 GB memory card will store approximately 80,000 images or 3 hours of video.

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 the RECONYX® BuckView™ software (available on our website) under the “Tools” menu item or 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: 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”. (un-check “Quick Format”.)

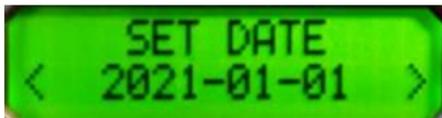
Step 4: Once the process is completed, take the memory card out and insert it into your Camera.

TIP: *We recommend that you purchase two memory cards per camera so that you can swap cards in the field.*

You can purchase RECONYX® certified memory cards at www.reconyx.com

Camera - Setup & Programming

Camera settings can be changed either by using the App, or by using the on-camera menu system. Most people find it simpler to make these changes using the Reconyx Connect App. This is done by touching the “gear” icon on the camera details page.



If this is the first time you've used your camera, it will take you through a setup wizard to help you with initial setup. It will start by asking you to set the date.

Use the up and down buttons to change numbers and the right and left buttons to scroll through settings for year, month and date. The OK button will take you to the Set Time screen. Proceed through the setup wizard until setup is complete.

When going through the initial setup wizard, you will be given the option of entering Latitude and Longitude. You can skip this on initial setup and enter it later if you don't know the exact location where you will be deploying your camera. See the “Location Information” section later in this manual for more details.

Connect™ App Options

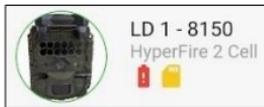
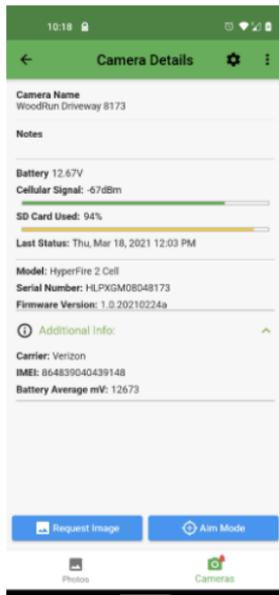
Now that you have set up your account and paired your camera, it's time to set up the camera the way you would like to use it. You have many options for programming your camera's behavior with the RECONYX® Connect™ app.

Camera Details

Selecting “Cameras” in the app will give you additional information regarding the status of your camera.

Including:

- Battery Life
- Cellular Signal
- SD Card Percentage Used
- Last Status, Date and Time
- Model
- Serial Number
- Firmware Version



If there is a potential problem with the camera, you may notice a red or yellow icon on the “Cameras” screen. There are different icons to alert you to Battery strength, Cellular Signal, SD Card Used, or other issues.

Check Signal Strength

When you deploy your cellular camera, you will want to check the signal strength to be sure the camera has a strong enough signal to send images.

Request Image

Will allow you to take an image of what is in front of your camera and have it saved in your Photos in the app.

Signal Strength Explained

Once a connection to the network is established the Reconyx® Connect™ app will display the cameras dBm rating (signal strength).

Less than -113	= Signal is too weak, camera will not attempt to send
-96 to -112 dBm	= Camera will attempt to send
-86 to -95 dBm	= Marginal Signal – should send photos, may take longer
-76 to -85 dBm	= Acceptable Signal
-66 to -75 dBm	= Good Signal
0 to -65 dBm	= Excellent Signal

**approximate values*

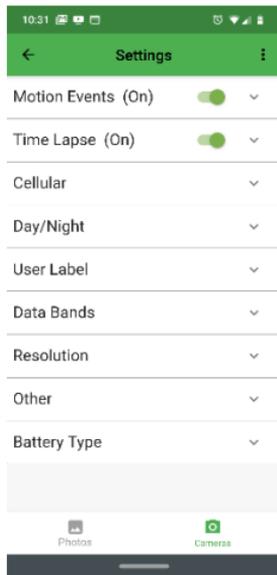
Cellular Programming Options

Image Size:

- Mobile Optimized Resolution
 - Counts as 1 photo toward monthly total
- Full Resolution
 - Sends full resolution photos
 - Counts as 10 photos toward monthly total

Transfer Mode:

- Low Volume
 - Modem shuts down between events
 - Low traffic – a few events per week
- Fast
 - Keeps modem connected to network at all times
 - Higher Traffic – expect activity/events every day
- Batch
 - Modem powers on and sends photos at specified intervals
 - Non-urgent data transfer
- Status Only
 - Modem powers on once per day to send camera status.
 - Camera takes and saves pics to SD card, but does not send them.



Sending Pictures

When the camera is triggered it will take the number of photos specified in the trigger settings. The camera will then send the photos according to the “Transfer Mode” setting (Fast, Low Volume, or Batch) .

By default, Mobile Optimized photos will be transmitted to the RECONYX® Connect™ app. If you would like the HD/full resolution photo you can request them within the app. You can also have all full resolution photos sent, but this will cost 10X as much for data as sending mobile optimized images.

NOTE: Mobile Optimized and Full resolution photos are always saved to the SD card.

NOTE: If Full Resolution (HD) Photos are sent, they will count as 10 photos toward monthly limit



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:

SIM ERROR	= Sim missing, or locked from carrier with pin
NO SERVICE	= Bad APN, Incorrect carrier, or cannot connect to a tower
NO SIGNAL	= signal is bad, or no 3G/4G available
NO DATA SERVICE	= Account, or APN issue, or server is down
ACCOUNT ERROR	= No security token, or picture limit reached
COULD NOT PAIR	= Account error (CANCELED, EXPIRED, TIMEOUT)
AUTH ERROR	= Login issue (Username or Password)
ERR: ##	= Modem error codes

Camera Programming Menu

NOTE: *There is a Programming Menu Map in the center of this manual.*

Your camera includes two main levels of options:

Level 1: Main Menu options (*yellow*)

Level 2: Change Setup options (*grey*)

The programming menus are set up so that the most used items are at the top level. Other camera settings that are not as frequently accessed do not show up every time you are setting up or moving your camera.

TIP: *As with the date and time, you can move through and select any of the menu options by pressing the directional buttons to scroll and the **OK** button when the menu or option you want to select is displayed.*

The backlit LCD includes two lines of information.

The top line displays the menu, option or setting you are currently accessing. After you make a



selection, it may display additional information. The bottom line displays the available options/settings. Selections you can choose from are always displayed between < > brackets on the bottom line.

NOTE: *The camera will remember the settings even when shut off, you do not need to reconfigure the camera unless you want to change its behavior.*

Default Settings

NOTE: *Throughout this manual, default camera settings are shown in **red letters**.*

Your RECONYX® HyperFire 2™ camera comes pre-programmed with factory default settings. By default the HS2X camera will take **3 pictures per trigger** with a **1 second pause between pictures** and **no delay between triggers**. The HL2X camera will take **5 pictures per trigger in RapidFire™ mode** with **no delay between triggers**.

If you wish to change your camera's settings, you can do so easily in the field at any time. Changes are easily made using the control buttons and the LCD display. Once you make selections, they are retained by the camera – even when the camera is off and the batteries are removed – so that you don't need to make selections again unless you want to make any changes.

Level 1: Main Menu Items

NOTE: Main Menu Items are shown in **Yellow** on the Programming Diagram.

Arm Camera – When you select this option, your camera arms in ten seconds. You can cancel the arm sequence by pressing the “OK” button.

Change Setup – Allows you to change the way your camera functions – see details below.

Aim Camera – Sends photos to Connect™ app every 3-5 seconds.

WalkTest – Camera will flash an indicator led so that you can test its aim by walking in front of it (see page 18 for more information). The tilt of the camera is critical, as slight changes are magnified at greater distances from the camera.

TIP: *If left in WalkTest mode, the camera will automatically arm itself after 2 minutes with no motion events. This allows you to set the camera up, check its aim using WalkTest and then just walk away.*

Check Cellular – Camera will connect to the network and report signal strength.

Erase Card – Camera will wipe memory card clean, removing all images and other information from the card. You should **not** select **Erase Card** unless you are certain you want to remove everything from the card.

Battery Type – Select what type of batteries you are using to accurately display the amount of power remaining.

Status/About – When you select this option, your camera displays the number of pictures, number of videos, time, date, firmware version and serial number of the camera. The left and right buttons scroll between these items.

NOTE: *The battery status shows the level for different types of batteries. If you change battery types, be sure to change the “Battery Type” setting.*

Level 2: Change Setup Options

NOTE: “Change Setup” options are shown in **Grey** on the “Programming Diagram”.

MOTION – All settings related to how your camera behaves when motion is detected are grouped under this menu item.

1) **Motion Pictures** – **ON**, off

2) **Pictures Per Trigger** – 1, 2, **3**, 4, 5, 6, 7, 8, 9, 10 (HL2X is **5**)

- 3) **Picture Interval** – Is the time between photos.
RapidFire™, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 sec (HL2X is **RAPIDFIRE**)
- 4) **Motion Videos** – on, **OFF**, Dynamic
- a) **If On, Video Length** – 5s, **10s**, 15s, 30s, 60s, 90s (HL2X default is **5s**)
- b) **If Dynamic Video is On** (HL2X default is **ON**)
If Dynamic Video is turned on, the video will end early if it appears that the subject that triggered the camera is either no longer moving or has left the scene. 5 and 10 second videos will end if no motion is detected for 3 seconds. 15 second videos will end if no motion is detected for 5 seconds. Longer videos will end if no motion is detected for 10 seconds.
- c) **Quiet Period** – Time between triggers.
NO DELAY, 5s, 10s, 15s, 30s, 1m, 2m, 3m, 5m
- 5) **Sensitivity** - low, low/medium, medium, medium/high, **HIGH**, very high
- 6) **Motion Schedules** – **24 HOUR**, **Add Solar**, **Add Fixed**
By default the camera operates 24 hours per day every day of the week.
If you want to schedule your camera's operations, there are two ways to define start and stop times for your camera. You can add Solar schedules and/or Fixed schedules.

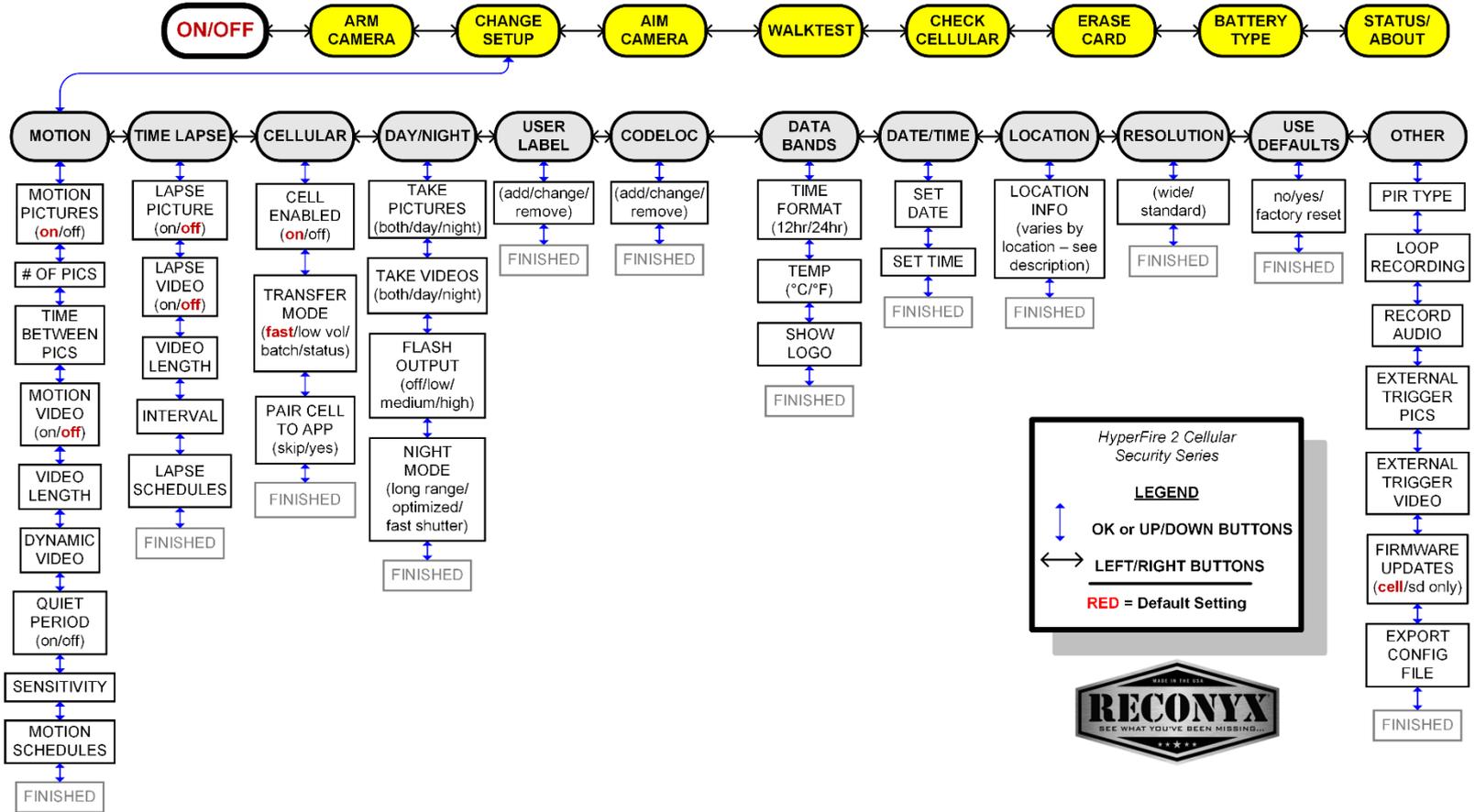
With HyperFire 2™, RECONYX® has added a new method for scheduling your camera that we call **Solar Adaptive Scheduling™**. With Solar Adaptive Scheduling™ you can program your camera to start and stop taking pictures at times relative to sunrise and sunset. If you are monitoring subjects whose behavior is tied more to the sun's rising and setting than it is the clock, this method of scheduling the camera makes a lot of sense. And the best part about it is that as the sunrise and sunset times change, your schedule adapts with the changing length of day.

When you add a Solar schedule you must specify start and stop times in (number of minutes) (before or after) (sunrise or sunset). For example, you can specify that the camera will turn itself on 30 minutes before sunrise and off 90 minutes after sunrise. Or you can schedule your camera to run from an hour before sunrise, to an hour after sunset.

When you add a Fixed schedule, you simply specify the start and stop times of each period you want the camera to be active.

You can define up to 5 windows of operation (schedules) to be used simultaneously. This can be a combination of fixed and solar schedules. These schedules can each be assigned to different days of the week if desired. By default they are on every day of the week (**S M T W T F S**).

Programming Menu Map – HF2 Cell Security



TIME LAPSE – All settings related to how your camera behaves related to time based triggers are grouped under this menu item.

- 1) **Lapse Picture** – On, **OFF**
- 2) **Lapse Video** – On, **OFF**
 - a) **If On, Video Length*** – 5s, **10s**, 15s, 30s, 60s, 90s
- 3) **If Picture or Video On, Interval** – 1 min, **5 MIN**, 15 min, 30 min, 1 hour
- 4) **If Picture or Video On,**
 - a) **Lapse Schedules – 24 HOUR, Add Solar, Add Fixed**

When you add a Fixed schedule, you simply specify the start and stop times of each period you want the camera to be active.

You can define up to 2 windows of operation (schedules) to be used simultaneously. This can be a combination of fixed and solar schedules.

See description of **Solar and Fixed Schedules**.

CELLULAR – Select options relating to the camera's cellular functionality.

- 1) **Cell Enabled** – **ON**, Off
- 2) **Transfer Mode** – **FAST**, Low Volume, Batch, Status Only
(Additional Information available under “Connect App Options: Transfer Mode”)
- 3) **Pair Cell to App** – **SKIP**, Yes

DAY / NIGHT – Select options relating to the camera's functionality with regard to taking photos/videos during day time and night time periods as well as select the best night time Infrared illumination options for your application.

- 1) **Take Pictures** – Day Only, Night Only, both **DAY & NIGHT**
- 2) **Take Videos** - Day Only, Night Only, both **DAY & NIGHT**
- 3) **Flash Output** – **HIGH**, Medium, Low, Off (HL2X is **Medium**)
- 4) **Night Mode** - Adjust the nighttime exposure (HL2X – **NA**)
OPTIMIZED – best combination of shutter speed and flash range

Fast Shutter – reduced motion blur, reduced flash range

Long Range – increased range, reduced image quality

USER LABEL - Add a label (up to 16 characters) that will be included in the data band of all photos and videos taken by your camera. You can also view, change, or clear an existing label.

CODELOC - Use CodeLoc™ to add a four-digit security code to your camera to prevent unauthorized use of your camera in the event of tampering or theft. You can also change or remove an existing code.

TIP: Write your CodeLoc™ code in the 'My Information' page near the back of the manual.

DATA BANDS – Set format for how time and temperature will be displayed on the data bands for photos and videos. Select Time Format (**12** or 24 hours), and Temperature scale (**FAHRENHEIT**, Celsius).

DATE/TIME – Set the date and time. Up and down arrows change numbers, left and right arrows move between year, month and date. OK takes you to the time setting. Use up and down buttons to change numbers. Use left and right buttons to move between hours and minutes.

If you are an International customer and you have set your location information, when you change date/time, you will be prompted to validate your sunrise time. This is so that the camera can support Solar Adaptive Scheduling.

LOCATION – **USA** or Other.

Users in the USA will be prompted for State/Territory, Time Zone (if your state crosses time zones), and whether you want the camera to Auto Adjust for Daylight Savings time. USA users will also be able to refine their location information to a specific Latitude/Longitude. This makes for more accurate Solar Adaptive Scheduling, and also allows the user the option of Geo-tagging their images with the specific Latitude and Longitude of the camera. By default Geo-tagging is turned off.

International users will be prompted for Latitude/Longitude, they will be asked whether they want to Geo-tag images, and they will be asked to validate Sunrise time for the current date. This information is required to enable Solar Adaptive Scheduling to function properly.

RESOLUTION – Select picture and video aspect ratio. (**STANDARD**) or (**WIDE**). (HL2X defaults to **WIDE**)

TIP: HS2X, Standard records full resolution pictures and videos. Wide matches the aspect ratio of widescreen monitors or TVs. HL2X photos are optimized for reading license plates, not for viewing on any particular device.

USE DEFAULTS – **NO**, Yes, Factory Reset

If you choose Yes, your settings will be reset to defaults (shown above in **RED CAPITAL** letters). Defaults will not reset your date, time, battery type or location information. If you choose Factory Reset, all of your settings will be reset to factory settings and your camera will re-boot as if it were the first time you powered it on.

TIP: *You can return to the Main Menu options at any time by simply pushing the “up” directional arrow button.*

OTHER

- 1) **PIR TYPE – LONG RANGE**, HF Legacy (HL2X – **NA**)
HF Legacy will function the same as 1st generation HyperFire camera's.
- 2) **Loop Recording – OFF**, On
Loop Recording allows you to run perpetually without ever filling a memory card. The camera will overwrite the oldest images and/or videos once the card is full.
- 3) **Firmware Updates – ALLOW VIA CELL**, SD Card Only
- 4) **RECORD AUDIO – ON**, Off
If you would like to record videos without audio, choose Off.
- 5) **EXT TRIGGER PICS – OFF**, on
If your camera has the external trigger option choosing “On” will use the number of pics and interval specified under Motion Options.
- 6) **EXT TRIGGER VIDS – OFF**, on
“On” will use the video length specified under Motion Video options.
- 7) **EXPORT CONFIG – NO**, yes
If you would like to save the settings from one camera so that you can load the same settings to another camera, you can choose Yes. This will create a folder on your SD card called RECONYX, where a config file will be saved (HF2SEC.CFG for the HS2X, and HF2LIC.cfg for the HL2X).

All settings will be transferred from one camera to the next except for location, date/time, and battery type.

If you insert this card into another HyperFire 2™ camera of the same type it will load the settings onto that camera. The file will be erased from the card once the settings are applied.

You can also copy the folder and contents onto additional SD cards for programming multiple cameras.

Solar Adaptive Scheduling™

With Solar Adaptive Scheduling™ you can program your camera to start and stop taking pictures at times relative to sunrise and sunset. If you are monitoring subjects whose behavior is tied more to the sun's rising and setting than it is the clock, this method of scheduling the camera makes a lot of sense. And the best part about it is that as the sunrise and sunset times change, your schedule adapts with the changing length of day.



When you add a Solar schedule, you must specify start and stop times in (number of minutes) (before or after) (sunrise or sunset). For example, you can specify that the camera will turn itself on 30 minutes before sunrise and turn itself off 90 minutes after sunrise. Or you can schedule your camera to run from an hour before sunrise, to an hour after sunset, etc.

When you add a Fixed schedule, you simply specify the start and stop times of each period you want the camera to be active.

You can define up to 5 windows of operation (schedules) to be used simultaneously. This can be a combination of fixed and solar schedules. These schedules can each be assigned to different days of the week. By default, they are on every day of the week (**S M T W T F S**).

Note: *Solar Adaptive Schedules are closely tied to, and rely on, accurate Location information being entered into your camera.*

If you are a USA user and you do not set a specific latitude and longitude for your camera, the Solar Adaptive Schedules will use the center of your specified state or territory to determine approximate sunrise and sunset times. If you set a precise latitude and longitude for your camera, then your sunrise and sunset times will be accurate to within a couple of minutes, and they will adapt on a daily basis as the sunrise and sunset times change.

If you are an International user, you must enter your latitude and longitude for Solar Adaptive Schedules to work. International users must also Validate the Sunrise Time on the day you set your location and/or change your cameras internal clock. This allows the camera to sync up with your local time when it determines sunrise and sunset.

If you are above 65 degrees North or below 65 degrees South, Solar Adaptive Schedules are not available, as length of day/night prohibits their effective use

Mounting Your Camera

Your RECONYX® HyperFire 2™ camera can be mounted to a RECONYX® Universal Camera Mount™ or a camera tripod by utilizing the threaded insert on the bottom of the camera housing.

The camera can also be mounted to a tree by using the adjustable webbing strap (shown below). You can secure the camera to a tree and lock it shut at the same time with an optional Python™ cable lock by Masterlock®. Simply thread the cable through the “Lock Tunnel” on the camera and then cinch in place around the tree or post.

Mounting Camera with Adjustable Webbing Strap (included)



We recommend that you mount your camera at the approximate height of your target and use the walktest mode to be sure your aim is correct. See the “Aiming Your Camera” section for additional details.

NOTE: It is highly recommended that you use a theft deterrent device such as a security box and/or a Python Lock™ by Masterlock® to help secure your camera against possible theft when it is in the field.

You can purchase HyperFire 2™ compatible mounts, theft deterrent cable locks and security enclosures at www.reconyx.com

Locking & Securing Your Camera

There are a number of options to securely mount your camera.

- 1) A Python™ cable lock by Masterlock® can be used by threading it through the Lock Tunnel in the camera and securing it to a tree or another object. This will prevent the camera from being opened or easily removed.
- 2) For increased security, RECONYX® offers a custom fit Security Enclosure for the HyperFire 2™ camera series. The Security Enclosure can be secured with either a padlock or the Python™ cable lock by Masterlock®.



HyperFire 2™ Security Enclosure



Python™ cable lock by Masterlock®

Aiming Your Camera

PIR Motion Detector

The Passive Infrared Motion Detector on your HyperFire 2™ camera is 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 triggering on subjects outside the view of the camera.

The motion detector can detect movement up to 100 feet (30 m) away. However, the detection range is dependent on the size and temperature of the subject (relative to ambient temp) as well as the speed at which the subject is moving.

The HyperFire 2™ Security camera's active detection zones are identical to the detection zones on the 1st generation of Hyperfire cameras (shown in red below). Camera aim is critical to maximize detection range. The default setting for PIR type is "Long Range". So, by default your HyperFire 2™ camera will be a bit more sensitive to motion than your original HyperFire camera was. If you would like it to be identical, choose "HF Legacy" for PIR Type.



For the camera to trigger two things need to happen:

- 1) An object with a temperature different from the background temperature must be present within the field of view of the motion detector (shown in red) (i.e. something warmer or colder than the ambient temperature).
- 2) That object (with a temperature differential) must move horizontally within the active zone approximately 1/8th of the way across the field of view of the camera.

Connect™ App Aim Mode

This feature will allow you to check your cameras placement to be sure it is aimed correctly.

If you have “Real Time Access”, you can enter Aim mode in the Connect app any time the camera is on and armed. The app will wake up the camera to start aim mode.

If you do not have “Real Time Access”, you will need to put your camera into “Cell Aim Mode” using the menu on your camera. Once in Cell Aim Mode the camera will take and send a photo every 3-5 seconds, allowing you to adjust the placement of the camera to capture the area of interest correctly.

You can also “Show motion zone overlay” to see approximately where motion will trigger the camera.



NOTE: These images will not be saved to your photos for viewing later.

NOTE: Aim Mode photos count toward your monthly total.

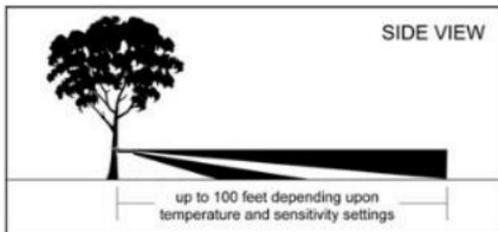
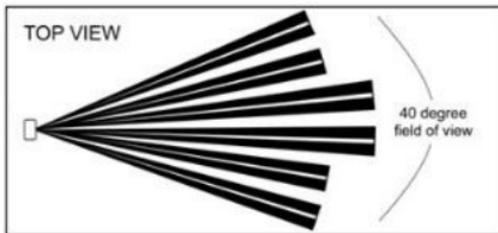
Using the “WalkTest” Mode

TIP: Using the “Aim Mode” feature in the Reconyx Connect app is a good way to ensure your camera is mounted and aimed the way you want.

While the aim mode on the App is a nice way to preview your camera’s field of view and positioning, using the WalkTest mode on the camera is the most reliable way to make sure your camera will detect motion in the exact areas you want to monitor. This ensures that your camera is aimed exactly where you want to capture activity.

- 1) Secure the camera to a tree or other object aiming the camera toward where you want it to capture pictures.
- 2) Put camera in “WalkTest” mode, and close the camera.
- 3) Walk in front of the camera where you expect to capture pictures. Every time the red WalkTest light blinks it indicates that a motion event has taken 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.

PIR MOTION DETECTOR COVERAGE AREA



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.

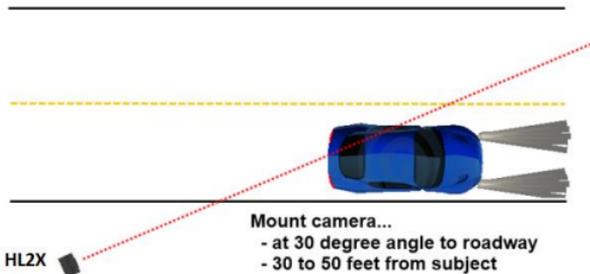
TIP: Be sure to use the “WalkTest” mode to be sure the camera is aimed correctly.

Aiming your HL2X Security Camera for License Plate Capture

The HL2X 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 below shows how you should set-up your camera.

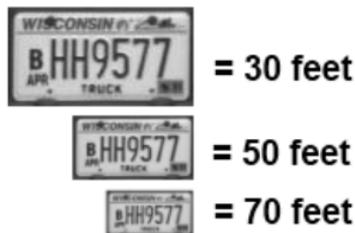


NOTE: Typical nighttime illumination range of the HL2X is 50 feet.

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.

Plate Visibility at Various Distances

When setting up your HL2X, be aware that the further the camera is positioned from the subject, the smaller the plate will appear within the picture.



HL2X (License Plate Capture) Tips:

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.

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



The default mode for License Plate Capture is 5 still images in RapidFire mode. If you find that you do not get enough opportunities to read a plate in default mode, you can switch to 5 second videos with Dynamic length turned on. The videos record a series of still photos in a motion jpg with the same resolution as the still images. You get 5 frames per second in video mode, so typically you will get about 3 times as many images of a given vehicle. The downside to this is more storage space is used up for each vehicle, and videos are a harder to view each frame.

The illumination is set to Medium output as default for the HL2X. Under most situations, this is a perfect setting. If, however, you have very close plates and you are getting "blow-out" on the plates, you can turn the illumination down to Low output. If you are set-up in such a way that plates are a little dim at night, you can boost the illumination output to High.

Image Data Information

Your RECONYX® HyperFire 2™ camera stores Image Data along with every picture it takes. Some of this information is displayed in Image Data bands above and below the image.



- The Date and Time are shown in the top data band.
- On the top data band: “M” indicates a “Motion” event, “T” indicates “time-lapse” event. “S” indicates “Daily Status” photo. “L” indicates a “live-image request.” “D” indicates a “Dynamic Video” sequence.
- “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), and ☾ (waning crescent).
- An “Illumination” ☼ indicator appears in the Image Data bands, when the infrared illuminator is used.
- The bottom data band displays the camera model, but can be changed to a custom label of your choosing on the camera or in the app.

Additional Camera Options

IR Mask

If you need to clean the IR Array window, the IR Mask™ is easily removed by carefully inserting a small screwdriver in one of the small slots and prying it out.

Warning! Be very careful not to scratch the IR Array window!

Step 1



Step 2



The windows covering the IR Array, lens, WalkTest indicator and light meter may all be cleaned with glass cleaner or water using a soft non-abrasive cloth.

To replace the IR Mask™, carefully line up one side of the IR Mask™ with the IR Array window. Then gently push on both sides until the IR Mask™ is completely seated against the window and snaps into both sides.

Troubleshooting

Cellular Troubleshooting

Initial Setup Pairing Issues or Poor Signal

If you have trouble pairing the camera or get a No Service error during the initial set up, please check the following:

- Antennas have been properly installed on the camera.
- SIM Card is installed in the camera.
- Move to a different location to try to acquire better signal.

No Photos Sent

After your account is setup and camera paired, you do not receive photos:

- Check the signal strength using the “Check Cellular” option on the camera.
- Make sure that your account is setup properly through the Connect™ app.
- Check for any alerts in “Camera Details” of Connect™ app indicating billing, battery, signal or SD card issues.
- If you must visit the camera to investigate issues, press “OK” to disarm the camera and to display any errors that are on the camera.

Poor Signal Strength

If you are getting inconsistent results it is most likely due to poor signal in the location where the camera has been deployed; relocate the camera. Sometimes moving the camera just a few feet can make a significant difference in signal strength.

Notification of Photos Sent but do not appear in App

- Scroll through photos to find photos with blue highlight around them. This blue highlight indicates new images that were uploaded.
- Check that the Date & Time on the camera are correct. By default, the images are organized in the application by time and date entered in the camera. If that is incorrect, the application will be putting the images in a different date group.
- Hit the Refresh button (Circle with Arrow) to load new images.

App Issues

Be sure it is not an issue with your device.

- Use the device task manager to shut down and restart the app.
- Check for updates in the App Store.
- Power cycle your phone/tablet
- Uninstall the application and reinstall.

On Camera Troubleshooting

Firmware Updates

As long as you are using your cellular camera and are connected to the network, your camera will keep its own firmware up-to-date (unless you turn off auto-update in the App). We recommend you leave auto-update on. If you choose to manually manage your firmware version, you will be notified when your firmware is out-of-date and needs to be updated. Updating firmware on the HyperFire 2™ Series cameras takes just a minute or two and is well worth the effort to ensure your camera is performing at the highest level possible.

Limited Nighttime Range

If your nighttime range is less than expected, check to be sure you are using only recommended battery types, and that they are new or fully charged.

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 outer space). 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).

The other issue you may encounter with setup is that if you have an object near the camera that reflects a lot of IR energy back to the camera. The camera will optimize its exposure so as not to over expose this close object. This can result in what appears to be limited range. The solution to this setup problem is to either move the camera or remove the close object from the field of view of the camera.

Focus Problems

If your images appear cloudy or out of focus, first consider whether there was snow or frost on the camera windows. 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 put your camera back to the default settings and try your camera again. This will ensure that you are running with known settings.

If the camera continues to false trigger, 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 vegetation. False triggers most often occur on sunny, breezy days. Vegetation will soak up the sun's energy and become warmer than the ambient air temperature. When the wind moves the vegetation, the camera senses this as motion. Careful placement of your camera helps prevent false triggers.

Only as a last resort should you turn down your camera's motion sensitivity. This reduces the ability to detect motion, especially during the summer.

Camera Not Triggering Consistently

First, put 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 subject, 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 can be quickly dispersed away on a breezy day, making it more difficult for the camera to detect 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 the 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 your camera won't start up properly or displays a "card error, write lock", first check to be sure your card is not "Locked". On most SD cards there is a switch on the side of the card. If the card is locked, you will not be able to save any photos. If the card is not locked, but this message persists, you can attempt to clean the contacts in the card holder by blowing canned air into the card slot. This will often resolve the issue.



If you have other issues, you may have to try a different brand of memory card. We have found that some memory cards can run slow and do not always run well. 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. Refer to "Battery Specifications" for recommended battery types.

Extreme cold weather does have an adverse effect on the LCD display; this does not inhibit the camera's ability to function; it just makes it hard to read the display.

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 temperatures are above 90° Fahrenheit or below 30° Fahrenheit. This will not damage your NiMH batteries; their charge just runs down faster.

If you notice that nighttime illumination decreases over time, you should change your batteries sooner, or switch to Lithium batteries.

**If these steps do not resolve the issue, contact us at
support@reconyx.com or call at 866-493-6064**

Warranty, FCC, CE, IC, RoHS and Safety Information

RECONYX® 5 Year Limited Warranty

RECONYX® warrants this product to be free of manufacturer's defects in materials and workmanship for a period of 5 years from date of original 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 sole discretion. This warranty is void if a product failure results from "acts of God", leaking batteries, accident, abuse, improper use, disassembly, or unauthorized maintenance and repair.

In order to qualify for your 5-year warranty, you must register your camera on our web site within 90 days of purchase. Go to www.reconyx.com/warranty to register your camera(s).

NOTE: There is a warranty seal on your camera; if this seal is broken or tampered with, the warranty is void. Any attempt to modify the camera from its original configuration will void the warranty.

RECONYX® Limited Software Warranty

Software products are licensed to the user under the terms of the applicable RECONYX® software license. If the user wishes to review the software license agreement, a copy of the software license is available at our website www.reconyx.com.

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, IC, CE Certification

This device complies with FCC, IC, and CE requirements. Under part 15 of the FCC Rules, the 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. This device has also been tested and found to comply with the emissions requirements of IEC 61000-6-3 and the immunity requirements of IEC 61000-6-1, and has been 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).



RoHS Compliance

The European Union Directive 2011/65/EU Restriction of Hazardous Substances (RoHS) legislation restricts the use of certain substances in electrical and electronic equipment. Reconyx Inc. expends considerable effort in verifying material compliance to RoHS and certifies that the processes and materials used to manufacture assemblies are compliant.

European Declaration of Conformity

We, [Reconyx, Inc] declare under our sole responsibility that the product “HyperFire2” to which this declaration relates is in conformity with the following standard(s) or other normative document(s).

IEC 61000-6-1:2005 - Part 6-1, IEC 61000-6-3:2011 - Part 6-3: EC 61000-4-2:2008 - , Part 4, IEC 61000-4-3:2010 - Part 4, CISPR 22: 2008 Edition 6.0

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, open the camera in a warm dry environment, 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.

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

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.

NOTE: 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.

Connect™ Account Number: _____

IMEI Number: _____

ICCID (SIM) Number: _____

Camera Serial #: _____

CodeLoc™ PIN #: _____

Register your Camera

Your new HyperFire 2™ camera is covered by a 5-year warranty. For the warranty to take effect, you must register your camera online within 90 days of purchase at www.reconyx.com/warranty.

If you setup and use the camera with your RECONYX® Connect™ account, this in effect does an automatic registration of your camera with us.

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