LOREX BY FLIR

USER'S GUIDE
LW2750 Series

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LW2750 Series

Thank you for purchasing this product. Lorex is committed to providing our customers with a high quality, reliable security solution.

This manual refers to the following models:

LW2750 Series (7" wireless surveillance system)

For the latest online manual, downloads and product updates, and to learn about our complete line of accessory products, please visit our website at:

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WARNING

RISK OF ELECTRIC SHOCK
DO NOT OPEN

WARNING: TO REDUCE THE RISK OF ELECTRIC SHOCK DO NOT REMOVE COVER. NO USER SERVICEABLE PARTS INSIDE.

REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.

CAUTION: TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF THE PLUG TO THE WIDE SLOT AND FULLY INSERT.

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1 Important Safeguards

In addition to the careful attention devoted to quality standards in the manufacturing process of your product, safety is a major factor in the design of every instrument. However, safety is your responsibility too. This sheet lists important information that will help to ensure your enjoyment and proper use of the product and accessory equipment. Please read them carefully before operating and using your product.

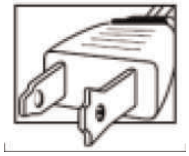
1.1 General Precautions

1. All warnings and instructions in this manual should be followed.
2. Remove the plug from the outlet before cleaning. Do not use liquid aerosol detergents. Use a water-dampened cloth for cleaning.
3. Do not use this product in humid or wet places.
4. Keep enough space around the product for ventilation. Slots and openings in the storage cabinet should not be blocked.
5. It is highly recommended to connect the product to a surge protector to protect from damage caused by electrical surges. It is also recommended to connect the product to an uninterruptible power supply (UPS), which has an internal battery that will keep the product running in the event of a power outage.

⚠ **CAUTION**
Maintain electrical safety. Power line operated equipment or accessories connected to this product should bear the UL listing mark or CSA certification mark on the accessory itself and should not be modified so as to defeat the safety features. This will help avoid any potential hazard from electrical shock or fire. If in doubt, contact qualified service personnel.

1.2 Installation

1. **Read and Follow Instructions -** All the safety and operating instructions should be read before the product is operated. Follow all operating instructions.
2. **Retain Instructions -** The safety and operating instructions should be retained for future reference.
3. **Heed Warnings -** Comply with all warnings on the product and in the operating instructions.
4. **Polarization -** Do not defeat the safety purpose of the polarized or grounding-type plug.
   A polarized plug has two blades with one wider than the other.



   A grounding type plug has two blades and a third grounding prong.

   The wide blade or the third prong are provided for your safety.

   If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

5. **Power Sources -** This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supplied to your location, consult your video dealer or local power company. For products intended to operate from battery power, or other sources, refer to the operating instructions.
6. **Overloading -** Do not overload wall outlets or extension cords as this can result in the risk of fire or electric shock. Overloaded AC outlets, extension cords, frayed power cords, damaged or cracked wire insulation, and broken plugs are dangerous. They may result in a shock or fire hazard. Periodically examine the cord, and if its appearance indicates damage or deteriorated insulation, have it replaced by your service technician.
7. **Power-Cord Protection -** Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them. Pay particular attention to cords at plugs, convenience receptacles, and the point where they exit from the product.
8. **Surge Protectors -** It is highly recommended that the product be connected to a surge protector. Doing so will protect the product from damage caused by power surges. Surge protectors should bear the UL listing mark or CSA certification mark.
9. **Uninterruptible Power Supplies (UPS) -** Because this product is designed for continuous, 24/7 operation, it is recommended that you connect the product to an uninterruptible power supply. An uninterruptible power supply has an internal battery that will keep the product running in the event of a power outage. Uninterruptible power supplies should bear the UL listing mark or CSA certification mark.
10. **Ventilation -** Slots and openings in the case are provided for ventilation to ensure reliable operation of the product and to protect it from overheating. These openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should never be placed near or over a radiator or heat register. This product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided and the product manufacturer's instructions have been followed.
11. **Attachments -** Do not use attachments unless recommended by the product manufacturer as they may cause a hazard.
12. **Water and Moisture -** Do not use this product near water — for example, near a bath tub, wash bowl, kitchen sink or laundry tub, in a wet basement, near a swimming pool and the like.
13. **Heat -** The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat.
14. **Accessories -** Do not place this product on an unstable cart, stand, tripod, or table. The product may fall, causing serious damage to the product. Use this product only with a cart, stand, tripod, bracket, or table recommended by the manufacturer or sold with the product. Any mounting of the product should follow the manufacturer's instructions and use a mounting accessory recommended by the manufacturer.

15. **Camera Extension Cables –** Check the rating of your extension cable(s) to verify compliance with your local authority regulations prior to installation.
16. **Mounting -** The cameras provided with this system should be mounted only as instructed in this guide or the instructions that came with your cameras, using the provided mounting brackets.

17. **Camera Installation -** Cameras are not intended for submersion in water. Not all cameras can be installed outdoors. Check your camera environmental rating to confirm if they can be installed outdoors. When installing cameras outdoors, installation in a sheltered area is required.

1.3 Service

1. **Servicing -** Do not attempt to service this product yourself, as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
2. **Conditions Requiring Service -** Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:
    - When the power supply cord or plug is damaged.
    - If liquid has been spilled or objects have fallen into the product.
    - If the product has been exposed to rain or water.
    - If the product has been dropped or the cabinet has been damaged
    - If the product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions. Improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to its normal operation.
    - When the product exhibits a distinct change in performance. This indicates a need for service.
3. **Replacement Parts -** When replacement parts are required, have the service technician verify that the replacements used have the same safety characteristics as the original parts. Use of replacements specified by the product manufacturer can prevent fire, electric shock, or other hazards.
4. **Safety Check -** Upon completion of any service or repairs to this product, ask the service technician to perform safety checks recommended by the manufacturer to determine that the product is in safe operating condition.

1.4 Use

1. **Cleaning -** Unplug the product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
2. **Product and Cart Combination -** When product is installed on a cart, product and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the product and cart combination to overturn.
3. **Object and Liquid Entry -** Never push objects of any kind into this product through openings as they may touch dangerous voltage points or “short-out” parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.
4. **Lightning -** For added protection of this product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the product due to lightning and power line surges.

2 LW2750 Series Features

- All-in-one rechargeable wireless 7” LCD receiver and recorder [1]
- 3 minute Internet setup with free smartphone / tablet apps (iOS / Android™) [2]
- Simple installation. No video cables required [3]
- Up to 90 days of recording [4]
- Multiple recording options: manual, motion, or schedule
- Push notifications sent to your smartphone / tablet when motion is detected
- Two-way audio Intercom
- Triplex operation: view live video, record, and playback simultaneously
- Pre-event motion detection recording
- Dual motion detection technology for more accurate alerts
- Time and date stamped recordings for easy retrieval
- Front panel feather touch controls
- Motorized camera filter provides accurate color reproduction in all lighting conditions
- Indoor / outdoor wireless cameras [5]
- Night time viewing up to 65ft (20m) away in ambient night time lighting conditions and up to 45ft (14m) away in total darkness [6]
- View and record up to 4 cameras at the same time
- Secure wireless signal
- Up to 165ft (50m) indoor / 660ft (200m) outdoor wireless range [7]

NOTE

1. Up to 2.5 hours of portable wireless monitoring. For extended monitoring or remote viewing, ensure the receiver is connected to a local power outlet.
2. Requires a high speed Internet connection and a wired connection to a router (not included). An upload speed of 1Mbps is recommended for optimal video performance. Up to 3 devices may connect to the system at the same time.
3. Wireless cameras require a wired connection to a power outlet.
4. Motion recording for a single camera based on VGA (640x480) recording resolution with 20 motion events per day and 30 second recording duration per event. Maximum recording time may vary based on the number of cameras that are recording, the amount of motion in the scene, and the size of the memory card used (8GB SD card included; 64GB supported).
5. Weather-resistant. Not intended for direct exposure to rain or snow. For outdoor applications install under shelter protected from the elements.
6. Stated IR Illumination range is based on ideal conditions. Actual range and image clarity depends on installation location, viewing area and light reflection/absorption level of object.
7. Based on line of sight. Actual range will vary depending on obstructions.

3 Getting Started

The system includes the following components:

Indoor / outdoor wireless camera(s)

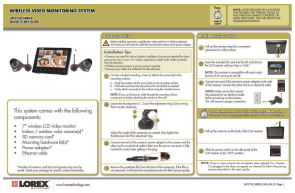
7” rechargeable LCD receiver / recorder

Power adapters for receiver and camera(s)

8GB SD memory card

Cat5e Ethernet cable

Mounting kit(s)



Quick Start Guide

* Configuration may vary by model

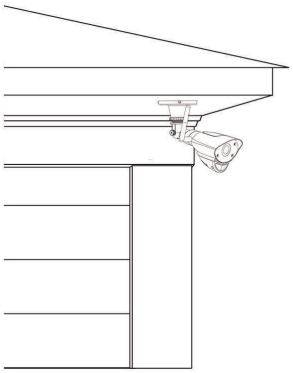
NOTE

Camera configuration, memory card size, and the number of accessories may vary by model. Please refer to your package for specific details. Check your package to confirm that you have received the complete system.

4 Installing the Camera(s)

CAUTION

Cameras are suitable for outdoor installation, but are weather resistant, not weatherproof. **Cameras are not intended for direct exposure to rain or snow.** For outdoor applications, install under shelter protected from the elements, such as beneath roof eaves. The diagram below shows an example of an ideal location for outdoor placement.



4.1 Installation Tips

- Before you install the camera, plan where and how it will be positioned, and where you will route the cable that connects the camera to the power adapter.
- Before starting permanent installation, check the camera image on the receiver when camera is positioned in the same place it will be permanently installed.
- It is recommended to ensure a clear line-of-sight between the camera and receiver and to limit the amount of obstructions, such as walls and tree branches, between the camera and receiver. Walls made of heavy building materials such as brick or concrete will significantly reduce signal range.
- If the signal will have to pass through a wall, placing the receiver or camera next to a window will improve the signal strength.
- Do not install the camera pointing out of a window. The nighttime picture will be unusable due to reflection from the night vision LED's.
- The cameras are pre-paired so they work out of the box. Each camera has a channel number sticker indicating what channel they are paired to. If you have purchased additional cameras, you will need to pair them to the receiver, see 16 *Pairing Additional Cameras*, page 40.

4.2 Mounting Positions

You may mount your cameras on a wall or ceiling. See the images below for recommended configurations of the camera stand and antenna.

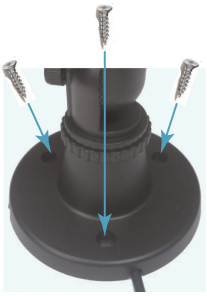
Wall Ceiling

NOTE

For ceiling installation, position the antenna as high as the ceiling allows. See the "Ceiling" mounting position in the figure above.

To install the camera(s):

1. Use the included mounting screws to mount the cameras to the mounting surface:



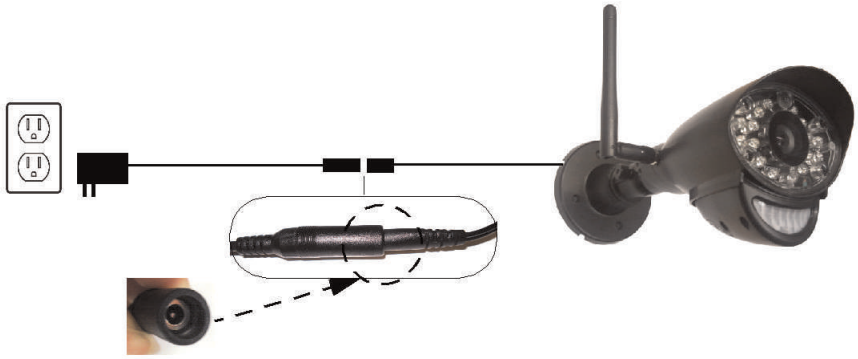
- Mark the positions of the screw holes on the mounting surface.
- Drill holes and insert the drywall plugs (included) as needed.
- Firmly attach the cameras to the mounting surface using the included screws.

NOTE

- If you run the power cable through the mounting surface, connect power before attaching the camera to the wall.
- If you run the power cable along the mounting surface, the cable must go through the cable notch on the camera base. This will keep the camera base flush to the mounting surface.

2. Loosen the thumbscrews **(1, 2)** and the adjustment ring **(3)** by turning them counter clockwise.

3. Adjust the angle of the cameras until the desired view is set. Tighten the thumbscrews and the adjustment ring to secure each camera's position.
4. Connect the power cable from the cameras to the weatherproof power connector. Plug the power adapter into a power outlet or surge protector.



NOTE

Power cables are only weatherproof when fully inserted at the connection point. Power cables may not be submerged in water.

5. Remove the protective film from the front of the camera. If the film is not removed, it will block the built-in microphone and affect the quality of the picture.

5 Installing the Receiver

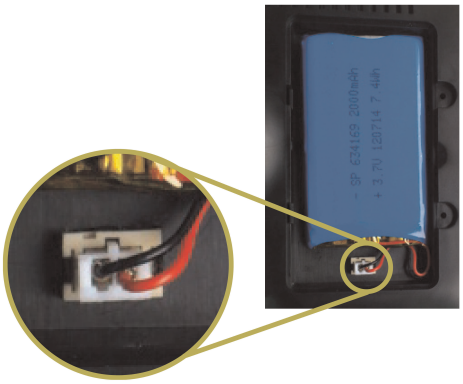
Step 1 of 4: Raising the antenna

For best reception, raise the antenna to point directly upward.

Step 2 of 4: Installing the battery

1. Use a Phillips screwdriver (not included) to open the battery compartment on the back

   panel.
2. Connect the battery cable to the battery terminal in the monitor. When finished, close the battery compartment and replace the screws.



NOTE
The battery cable only connects one way. Do not force the battery cable.

CAUTION

If you do not plan to use the unit for a prolonged period of time, disconnect the battery or ensure you charge it at least once every 6 months.

Step 3 of 4: Turning on the receiver

1. Connect the cable from the power adapter to the **5V DC** port on the side panel of the receiver. Plug in the power adapter to an outlet or surge protector

NOTE

Ensure you charge the receiver for at least 4.5 hours before using for the first time.

2. Slide the power switch on the side panel to the ON position to power the receiver on.

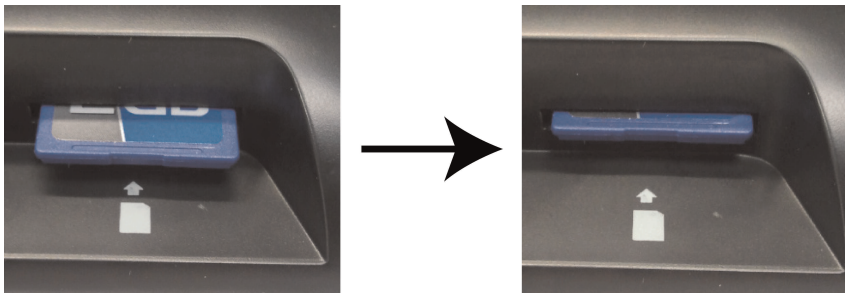
Tips:

- Place the receiver in a location that will have a clear reception to your camera. Try to maintain line-of-sight and minimize the number of obstructions between the camera and receiver.
- Adjust the antenna on the receiver as necessary to provide the clearest reception.

Step 4 of 4: Inserting the SD card

The SD card allows you to store video footage captured by the camera. You should always format the SD card prior to initial recording. For details, see 10.1 *Format Memory*, page 21.

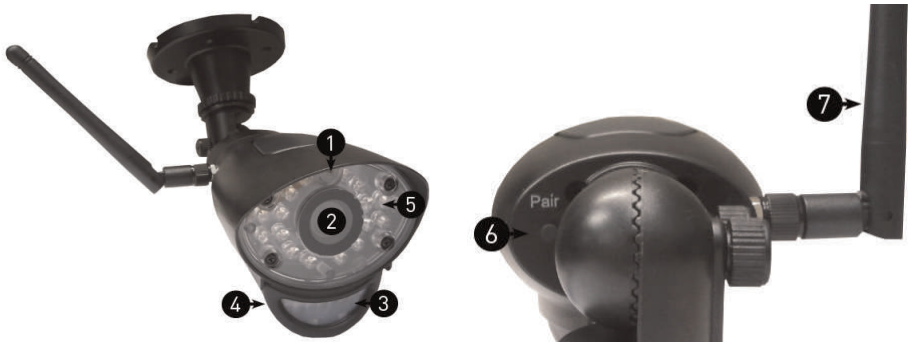
- Push the SD card into the SD card slot on the side panel of the receiver until you hear a "click." The card will not be flush when completely inserted.



NOTE

The receiver is compatible with most major brands of SD cards up to 64 GB. For recording times on SD cards, see , page .

6 Camera Overview



1. **Microphone:** Built-in microphone.
2. **Lens:** Camera lens.
3. **PIR Sensor:** Passive IR motion sensor.
4. **Speaker:** Speaker for intercom.
5. **Night Vision IR:** Night vision IR LEDs.
6. **Pair:** Pairing button. For more details, see 16 *Pairing Additional Cameras*, page 40.
7. **Antenna:** Removable wireless antenna (SMA).

NOTE

This camera includes an Auto Mechanical IR Cut Filter. When the camera changes between day mode and night vision mode, an audible clicking noise may be heard coming from the camera. This clicking is normal, and indicates that the camera filter is working.

7 Receiver Overview

7.1 Front Panel Buttons

Button	Function
: Change Channel	Switch between connected cameras.
: Quad / Sequence Mode	Switch between Sequence and Quad (up to 4-channels) viewing mode.
: Scan Mode	Turns off LCD display until motion is detected by one of the cameras. See 12 *Scan Mode*, page 33.
: Zoom	Switch between 2x digital zoom and normal viewing mode.
: Delete File	Delete highlighted files in Playback mode.
: Menu	Open Main Menu. Return to previous menu / exit menus.
: Joystick	Move left / right / up / down to move the cursor in menus. Push to enter Playback mode.

7.2 Top Panel Buttons

Button	Function
: Two-way audio	Enable two-way audio.
: Motion recording	Activate / deactivate motion recording.
: Manual recording	Activate / deactivate manual recording.
: Volume up	Turn the volume up on the receiver.
: Volume down	Turn the volume down on the receiver.

7.3 Rear Panel

1. **Wireless Antenna:** Position the antenna as needed for best reception.
2. **Speaker**
3. **Stratus UID Number / QR Code:** Unique ID number for connection to the system with a smartphone / tablet.
4. **SD Card Slot:** Insert up to a 64GB SD card.
5. **USB Port:** Used for service purposes only.
6. **Receiver Stand**
7. **Ethernet Port (RJ45):** Connect the receiver to your router using the included Ethernet cable to enable smartphone / tablet connectivity.
8. **Power:** Slide switch to turn the LCD receiver ON/OFF.
9. **Power Port:** Connect to a local power outlet using the included power adapter.
10. **Power Indicator LED:** Glows when receiver is connected to power.

8 Using the System

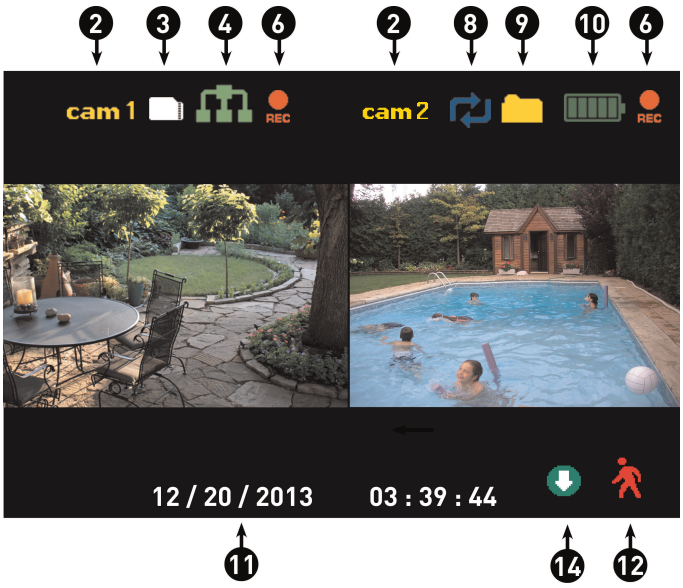
By default, the camera(s) included with your system are automatically paired to the receiver. The camera(s) and receiver will communicate with each other once they are powered on.

NOTE
It is recommended to power on the cameras before powering on the receiver.

8.1 Understanding the On-screen Display

With camera 1 properly connected and powered on, the system displays a full-screen live view of the camera.

With more than one camera properly connected and powered on, the system displays up to 4 channels in split screen with the live view of each camera. The figure below shows the display configuration for 2 cameras connected.



1. **Signal indicator:** The signal indicator shows the strength of the signal being received from the camera. The number of bars in the Signal Indicator shows the strength of the signal. One, or no bars indicates the signal is poor, and 4 bars indicate a very strong signal.

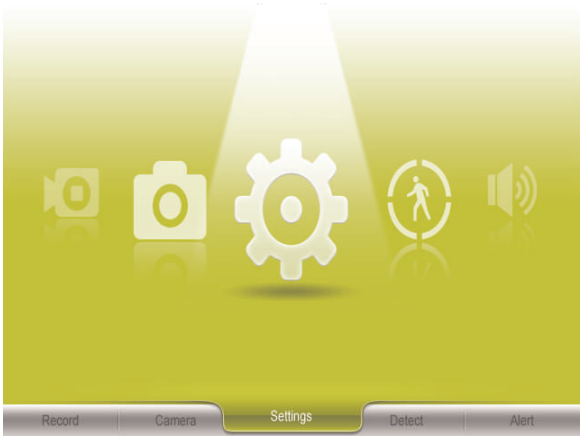
> **NOTE**
>
> - If the signal is low (e.g.,1 or 2 bars) adjust the antennas, or reposition the cameras or receiver for best performance.
> - The signal indicator is not shown during Quad mode.

2. **Camera indicator:** Displays the camera you are presently viewing. If viewing multiple cameras at once, the camera indicator will appear above each video display.
3. **Memory card icon:** A white icon shows that an SD card with available recording space is inserted in the receiver. A red icon indicates the SD card is full.
4. **Network status icon:**
   - — The receiver is connected to the Internet.
   - — The receiver is connected to the router, but is not connected to the Internet. Turn the receiver on and off again if you see a yellow icon.
   - — The receiver is not connected to your router.
   - — A smartphone / tablet is accessing the system remotely.
5. **Talk icon:** Indicates that the talk function has been enabled on the receiver.
6. **Recording indicator:** "REC" appears when recording is in progress. If viewing and recording video from multiple cameras at once, the recording indicator will appear above each video display where recording is enabled.
7. **Zoom indicator:** Indicates that the current live view is zoomed in to twice the original size.

8. **Overwrite icon:** Indicates Overwrite mode is on, which means the system will overwrite the oldest recordings when the memory card is full. For details, see 10.6 *Enabling / Disabling File Overwrite*, page 28.
9. **File icon:** Indicates that there are new recordings saved to the SD card.
10. **Battery indicator:** Shows remaining battery life. Icon turns red when battery is critically low to indicate that the receiver should be plugged into a local power outlet right away.
11. **Time stamp:** The current date and time on the system.
12. **Motion recording icon:** Indicates that motion recording is turned on.
13. **Volume indicator:** Shows the current volume of the receiver. You must be in single-channel viewing mode to change volume.
14. **Download icon:** Indicates that a new firmware is available in the server to download.

8.2 Navigating Menu Screen

Use the system menus to configure settings.



- Press to open the Main Menu.
- Use the joystick to move the cursor left, right, up, and down.
- Push the joystick to open sub-menus and confirm / save menu selections.
- Press to exit menus without saving changes.

8.3 Viewing Modes

There are four different viewing modes available on the system: single channel viewing, Auto Sequence Viewing mode (view individual channels automatically in sequence), Quad mode, and Scan mode (for details, see 12 *Scan Mode*, page 33).

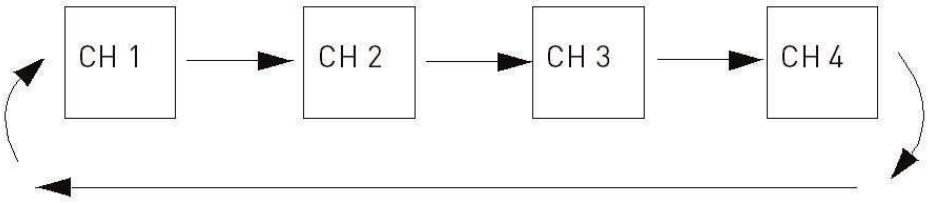
To change viewing modes:

- Press to select between Quad mode (half-Quad mode when only 2 cameras are connected) and Auto Sequence viewing mode.
  OR
- Press to switch between channels 1~4 in single channel view.

NOTE
Depending on the number of cameras packaged with the system, half-Quad mode (2 cameras) or single channel viewing (1 camera) is enabled when you first power on the system.

8.3.1 Auto Sequence Viewing Mode

Auto Sequence Viewing mode cycles through connected channels in full-screen.



To enable Auto Sequence:

- Press until a single channel is shown on screen. The receiver automatically switches through connected channels.
- Press to return to single channel viewing.

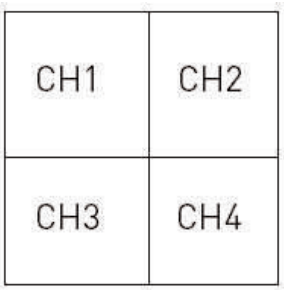
8.3.2 Quad Mode

Use Quad mode to view up to four cameras simultaneously.

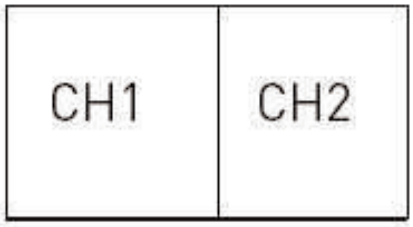
To enable Quad mode:

- Press .

NOTE
If only two cameras are connected to the receiver, use Quad mode for a split-screen view (half-Quad mode) that only shows the two channels being used.



Quad Mode



Half-Quad Mode

8.4 Digital Zoom

The digital zoom feature allows you to zoom in 2x on a single camera during live viewing. This is useful if you need a closer look at something happening far away from the camera.

To use digital zoom:

1. Select the desired camera in full-screen mode (press to select the channel) and press on the front panel of the receiver to zoom in.
2. When digital zoom is activated, a zoom icon ( ) appears on the screen. Move the joystick on the front panel of the receiver in the desired direction to look at different parts of the image.

3. Press again to exit digital zoom.

8.5 Using the Intercom (Two-way Audio)

Use the Intercom feature for two-way communication between the receiver and the camera. Talk and listen to persons near the camera from behind closed doors for added security.

NOTE
Please make sure the camera(s) is properly connected prior to using the Intercom.

To use the Intercom:

1. Select the desired camera in full-screen mode (press to change the displayed channel).
2. Press and hold on the top panel of the receiver.

   The talk icon ( ) appears on the receiver.
3. Talk in a normal speaking voice close to the LCD screen (approximately 12 in. / 30 cm).
4. Release the button to hear audio from the camera.

8.6 Intercom Volume

The two-way audio volume is different from the alarm / buzzer volume found in the Main Menu (**> Alert**).

To change two-way audio volume:

- From single-channel view, press / to change the two-way audio volume.

The volume icons on the screen indicate the volume of sound coming from the cameras:

NOTE
You cannot adjust the volume of the camera speakers.

9 Setting the Time

It is highly recommended to set the date and time on the system prior to recording, as they will be used to stamp recordings. You must set the correct date and time in order to use scheduled recording.

To set the time:

1. Press to open the main menu. Move the joystick left / right to select **Settings** and push the joystick to confirm.
2. Select **Date & Time** and push the joystick to confirm.
3. Move the joystick left / right to move the cursor; move the joystick up / down to change the year, month, day, hour, minutes, and seconds.

NOTE
The system uses a 24-hour clock only.

4. Push the joystick to save your settings.

5. Press to close any remaining menu windows.
   The date and time appears at the bottom of the screen in live viewing mode.

NOTE

When using the system for the first time, check if the time zone is correct for your area. For details, see 14.2 *Time Zone*, page 36.

NOTE

You can also synchronize the system time with an Internet time server. Ensure there is a checkmark next to **Synchronize with an Internet time server** then push the joystick to confirm.

You must keep the system connected to your wireless network using the included Ethernet cable to synchronize with the Internet time server.

10 Recording

The following recording modes are available on the system: *manual recording*, *schedule recording*, and *motion recording*. The system records video to the included SD card. Record up to 4 channels at the same time.

Recording Prerequisites:

- An SD card must be inserted into the receiver in order to record video. You should always format the SD card prior to initial recording. For details, see 10.1 *Format Memory*, page 21.

Maximum Recording Times:

The system supports SD cards up to 64 GB. Use the table below to help you estimate the recording times on various sizes of SD cards. Times shown are in hours and minutes.

SD Card Capacity	Single Channel Recording @ QVGA Resolution	Single Channel Recording @ VGA Resolution
1 GB	7 hours	6.5 hours
2 GB	14 hours	13 hours
4 GB	27 hours	26 hours
8 GB	54 hours	52 hours
16 GB	108 hours	104 hours
32 GB	216 hours	208 hours
64 GB	432 hours	416 hours

NOTE

The system supports SD High Capacity (SDHC) cards, minimum Class 2, up to 64GB. The following brands of SD cards are confirmed by Lorex: Adata, Kingston, Patriot, Sandisk, and Toshiba.

Recording Mode Summary:

Mode	Description	How to Operate
Scheduled Recording	• Continuous or motion event recording from up to four cameras according to a weekly schedule.	• Enter a start and stop time for each day from **> Record > Schedule Recording**.
Manual Recording	• Continuous recording from up to 4 cameras at a time.	• Press on the top panel of the receiver to start / stop manual recording.
Motion Recording	• System only records when motion is detected by a camera(s).	• Press on the top panel of the receiver to start / stop manual recording.

10.1 Format Memory

It is highly recommended to format the microSD card prior to initial recording.

To format the microSD card:

CAUTION

Formatting erases all data on the microSD card. This step cannot be undone.

1. Insert the microSD card into the card slot on the receiver until you hear a "click." Please insert the card according to the diagram on the side panel of the receiver.
2. Press , then select the **Record Setting** icon. Press OK to confirm.
3. Select **Format card** and press OK to confirm.
4. Select **Confirm** and press OK to confirm.

NOTE
Please allow a few moments for formatting to finish. Formatting time will vary depending on the size of the card.

5. A message appears to confirm formatting. Press repeatedly until all menus are closed.

10.2 Scheduled Recording

Use scheduled recording to have the system automatically record continuously between a selected start and stop time.

NOTE
Auto Sequence Viewing mode and Quad mode are available during schedule recording without affecting the recording files.

Prerequisite:

Please ensure you have set the proper date and time on the receiver prior to setting a recording schedule. See 9 *Setting the Time*, page 19.

When should I use schedule recording?

- Use continuous schedule recording if the camera is pointed at an area with high traffic, such as a entry / exit or a road.

CAUTION
Do not remove the microSD card while the system is recording. Disable all recording on the system before ejecting the microSD card.

10.2.1 Creating a Recording Schedule

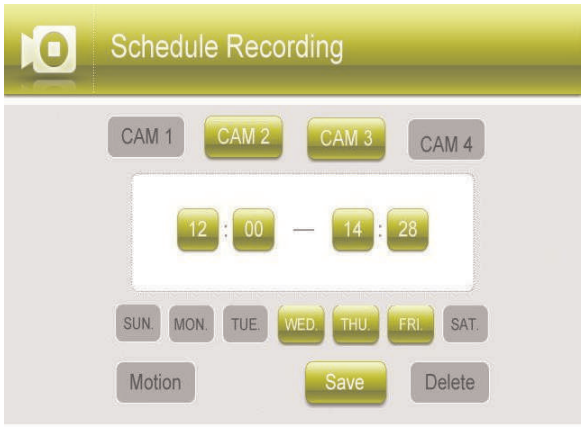
CAUTION
Manual recording will override scheduled recording?? If you wish to use scheduled recording, you must ensure manual recording is disabled.

To create a recording schedule:

1. Press , then select the **Schedule Recording Setting** icon. Press OK to confirm.

2. Move the joystick left / right to view existing recording schedules for each day of the week. Continuous recording schedules appear as green bars, while motion recording schedules appear as yellow bars.

3. Push the joystick to create a new recording schedule.



4. Select the channels that will use this recording schedule. Move the joystick left / right to move the cursor and push the joystick to include or dismiss the channel.
5. Select the start time and end time for schedule recording by moving the joystick left / right to move the cursor, then up / down to change the values.

NOTE
The time uses a 24-hour clock.

6. Select which days to apply the recording schedule to by moving the joystick left /right to move the cursor, then push the joystick to include or dismiss a day.
7. Move the joystick left / right to select **Save**, then push the joystick to create a continuous recording schedule.
   OR

   Move the joystick left / right to select **Motion** and push the joystick to enable the recording schedule for motion recording only. Select **Save** when finished to save your settings.

8. Press until all menus are closed.

10.2.2 Stopping Scheduled Recording

When the stop time arrives, the system stops recording automatically. If necessary, you can stop schedule recording manually.

To stop schedule recording:

- Press to stop schedule recording.

NOTE
If you stop schedule recording before the end time, the system will automatically resume recording after half an hour.

10.2.3 Modifying or Deleting a Recording Schedule

You can modify any recording schedule by adding or subtracting recording time.

To modify a recording schedule:

1. Press , then select **Record**. Push the joystick to confirm.
2. Select **Schedule Recording**.
3. Move the joystick up / down to select **Modify** and push the joystick to confirm.
4. Select which channels to change the schedule for by moving the joystick left / right to move the cursor, then push the joystick to include or dismiss the channel.
5. Select the start time and end time for the modification. This could be a span of time you wish to add to or subtract from an existing schedule. Move the joystick left / right to move the cursor, then move the joystick up / down to change the start and end time.

NOTE
The time uses a 24-hour clock.

6. Select which days of the week to apply the modification to by moving the joystick left / right to move the cursor, then push the joystick to include or dismiss a day.
7. Move the joystick left / right to select the type of modification:
   - Select **Save** to add onto a continuous schedule.
   - Select **Motion** then **Save** to add onto a motion schedule.
   - Select **Delete** to subtract from either type of schedule.
8. Press until all menus are closed.

To delete a recording schedule:

1. Press , then select **Record**. Push the joystick to confirm.
2. Select **Schedule Recording**.
3. Move the joystick up / down to select **Modify** and push the joystick to confirm.
4. Select which channels to delete the schedule for by moving the joystick left / right to move the cursor, then push the joystick to include or dismiss the channel.

5. Select the start time and end time of the schedule you want to delete. Move the joystick left / right to move the cursor, then move the joystick up / down to change the start and end time.

> **NOTE**
>
> The time uses a 24-hour clock.

6. Select which days of the week that use the schedule you want to delete. Move the joystick left / right to move the cursor, then push the joystick to include or dismiss a day.
7. Move the joystick left / right to select **Delete** and push the joystick to confirm.
8. Press until all menus are closed.

> **NOTE**
>
> If you delete a recording schedule during a scheduled recording time, the camera(s) will continue to record video for a short period afterwards. The system checks for changes in recording schedules every half hour and will eventually stop recording if a schedule has been deleted.

10.3 Manual Recording

Manual recording allows you to manually start and stop recording on any of the cameras. You can also record while in digital zoom mode. For details on using digital zoom, see 8.4 *Digital Zoom*, page 17.

When should I use manual recording?

- Recording of unexpected events or emergencies.

> **NOTE**
>
> Manual recording will override schedule recording. The system checks for active recording schedules every half hour and will eventually resume schedule recording after manual recording is stopped.

To enable manual recording:

1. Press until the channel you want to record is displayed.
2. Press to begin manual recording on the channel you are currently viewing.

   A recording indicator ( ) appears on screen to indicate the system is recording. Repeat steps 1–2 to enable manual recording on other channels. The system can record video from up to 4 cameras at a time.
3. Press again to stop recording on the channel you are currently viewing. The new recording icon ( ) will appear on the LCD receiver indicating a new file is on the SD card.

> **CAUTION**
>
> Do not remove the SD card while the system is recording. Disable all recording on the system before ejecting the SD card.

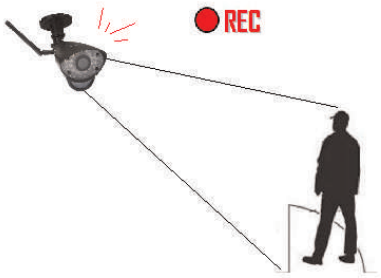
10.4 Motion Recording

Use motion recording to have the system record only when motion is detected by one of the cameras. Video is recorded from any connected camera that detects motion. The

system supports 5 second pre-recording, meaning that the system will record 5 seconds of video before a motion event. This allows you to see the entire event instead of starting when motion detection is triggered.

The system detects motion in two ways. The cameras have a built-in Passive InfraRed (PIR) sensor that tracks heat from body movements to detect movement up to a maximum range of 21 feet (6.5 meters). PIR motion detection is extremely accurate at detecting movements from people and animals, but the accuracy decreases in extremely hot environments approaching or exceeding human body temperature (98.6°F / 37°C).

PIR Motion Detection



A camera detects body heat movements, and triggers the system to record.

The system also uses video motion detection, which looks for changes in video images (frames) to detect motion. Video motion detection allows for motion detection beyond the range of the PIR sensors and in extreme temperatures. Video motion detection is highly accurate, but may trigger recording from changes in light or moving trees, leaves, etc. You can set the sensitivity of video motion detection depending on your preferences. See 10.4.3 *Configuring Video Motion Detection*, page 27

Video Motion Detection

The system detects movement in the image and triggers recording.

Both PIR and video motion detection are enabled by default for enhanced accuracy.

10.4.1 Setting up Motion Recording

Prerequisite:

- Insert an empty SD card into the LCD receiver.

NOTE

- Motion recording will override schedule recording. The system checks for active recording schedules every half hour and will eventually resume schedule recording after motion recording is stopped.
- You can also record motion events on a schedule. See 10.2 *Scheduled Recording*, page 22.

To enable motion recording:

1. Press on the top panel of the receiver to enable motion recording.
2. Press again to stop motion recording.

- By default, the system is set to record for 15 seconds after the triggered motion event. To set an alternative motion recording time, see10.4.2 *Configuring Motion Recording Time*, page 27.

CAUTION

Do not remove the SD card while the system is recording. Disable all recording on the system before ejecting the SD card.

10.4.2 Configuring Motion Recording Time

Set the length of the time the system will record after motion is detected by a camera.

To change the motion recording time:

1. Press , then select **Record** and push the joystick to confirm.
2. Select **Duration** and push the joystick to confirm.
3. Select **15 Seconds**, **30 Seconds**, or **1 minute** and push the joystick to confirm.
4. Press until all menus are closed.
    - The system supports 5 second pre-event recording, which is added onto the duration value specified in the menu. For example, if you set the duration to 15 seconds, your motion recordings will be roughly 20 seconds long.

10.4.3 Configuring Video Motion Detection

Video motion detection looks for changes in video images (frames) to detect motion. Video motion detection allows for motion detection beyond the range of the PIR sensors.

The drawback to video motion detection is that it can sometimes be falsely triggered by changes in lighting conditions or trees moving in the wind. You can disable video motion detection or configure the sensitivity using the menus. We recommend that you enable video motion detection and set a lower sensitivity if you are experiencing false triggers.

For a description of the two motion detection technologies used by the system, see 10.4 *Motion Recording*, page 25.

To configure video motion detection:

1. Press , then select **Detect**. Push the joystick to confirm.
2. Move the joystick up / down to select the camera you would like to configure video motion detection for and push the joystick to confirm.
3. Select **Off** to disable video motion detection, or select **Low**, **Medium**, or **High** sensitivity.
4. Push the joystick to save your changes.

5. Press until all menus are closed.

10.5 Recording Resolution

The recording resolution determines the size and quality of video images. The higher the resolution, the more space your recordings will take up on the memory card.

1. Press , then select **Camera**. Push the joystick to confirm.
2. Select **Resolution**.
3. Move the joystick up / down to select the camera you would like to configure, then move the joystick left / right to change the resolution.
   The system supports VGA (640x480) and QVGA (320x240) resolution.
4. Push the joystick to save your settings.
5. Press until all menus are closed.

10.6 Enabling / Disabling File Overwrite

Enabling file overwrite will delete the oldest recorded data on the SD card once it is full to make room for new recordings.

To enable file overwrite:

1. Press , then select **Recording**. Push the joystick to confirm.
2. Select **File Overwrite**.
3. Select **Yes** to enable file overwrite.
4. Press until all menus are closed. The overwrite icon ( ) displays during live viewing.

NOTE

If you do not enable file overwrite, the SD card icon on the OSD will be red ( ) when the SD card is full. You will need to manually delete files from the SD card or insert a new card into the receiver. For details, see 11.2 *Deleting Video Files*, page 30.

11 Playback

Playback mode allows you to playback recorded video files from the SD card. You can view videos directly on the system or by connecting the SD card to your computer.

11.1 Video Playback

To playback recorded video on the system:

1. During live viewing, push the joystick. The Recording File List opens.
2. Move the joystick up / down to change the displayed month.
3. Select the channels you would like to view recordings from:
   - Move the joystick left / right to select the channel numbers
   - Move the joystick up / down to show or hide each channel on the calendar.
   - Select the button with all four channels to show recordings from all connected cameras on the calendar.
4. Once you have selected the month and the channels to display on the calendar, push the joystick the refresh the display. Dates that have recordings available for playback are highlighted in green.
5. Move the joystick left / right to select a date on the calendar, and push the joystick to view a list of recordings for that date.

> **NOTE**
>
> - The system uses a 24-hour clock.
> - Recordings are named by start time in *hhmmss* format and the channel number (for example, the recording *133245-2* began recording at 1:32:45 PM on channel 2).

6. Select a file from the list and push the joystick to confirm. Move the joystick left / right to change pages to find video files quickly. The selected file loads and playback begins.

11.1.1 Playback Controls

1. **Playback duration:** Shows the length of the recording and how much has been viewed.
2. **File name**
3. **Playback status:** Shows whether the video is playing, paused, or stopped.

To control playback using the joystick:

- **LEFT:** Rewind (2x > 4x > 8x > 16x).
- **UP:** Pause / Play video.
- **RIGHT:** Fast-forward (2x > 4x > 8x > 16x).
- **DOWN:** Stop video.

- To change playback volume, press / on top of the receiver.
- To change playback volume, use the volume controls ( ) on the side panel of the receiver.

To exit playback:

- Press to return to the file list. Press repeatedly to return to live view.

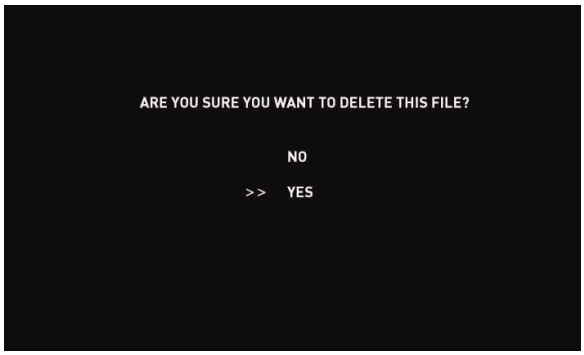
11.2 Deleting Video Files

You can delete files on the SD card directly on the system. Delete files if you need to clear space on the SD card (if file overwrite is disabled), or for your own file management purposes.

To delete files on the SD card:

1. From live viewing, push the joystick. The Recording File List opens.
2. Move the joystick up / down to change the displayed month.
3. Move the joystick left / right to select the channel numbers, and move the joystick up / down to show or hide each channel on the calendar. Select the button with all four channels to show recordings from all connected cameras on the calendar.
4. When you have selected the month and channels to display on the calendar, push the joystick to refresh the display. Dates that have recordings available for playback are highlighted in green.
5. Move the joystick left / right to select a date on the calendar, and push the joystick to view recordings from that date.
6. Browse to the file you would like to delete. Press on the front panel of the receiver.

7. A confirmation message appears. Select **YES** and push the joystick to delete the file.



8. Repeat the steps above for other files on the SD card.

CAUTION

Do NOT delete folders on the SD card using your computer. Deleting folders may affect your access to other files on the card or may affect normal operation of the SD card with the system. If you want to delete the entire contents of the SD card, it is highly recommended to format the card using the system. For details, see 10.1 *Format Memory*, page 21.

11.3 Viewing Video Directly from the SD Card

You can view the saved video files on your computer (PC or Mac) by using an SD card reader (not included). Saved video files are in ASF format.

NOTE

Some PCs and Macs may have an SD card reader built-in. Please refer to your computer's instruction manual for more details.

11.3.1 PC

NOTE

You can view ASF files natively in Windows Media Player™, as well as other media players such as VLC. VLC is an open-source software application available at www.videolan.org

To playback recorded video on a PC:

1. Remove the SD card from the receiver by gently pushing on the SD card and then releasing. The card will eject.
2. Insert the SD card into an SD card reader (not included) connected to your PC. Your PC should load the SD card as a new Removable Drive and an Autorun window opens.
3. Click **Open folder to view files** or open the folder in Computer. Open the folder **MFG**. You will then see a folder for each page of recorded video in Playback mode. Folders are named by page number (e.g. recordings found on the second page are in the folder **00000002**).
4. Double-click any of the ASF files. The video will begin playing in your default ASF media player.

11.3.2 Mac

NOTE

Downloading and installing the Flip4Mac WMV Components will allow you to play ASF files in QuickTime. VLC Player is recommended for viewing ASF files on a Mac. VLC is an open-source software application available at www.videolan.org

To playback recorded video on a Mac:

1. Remove the SD card from the receiver by gently pushing on the SD card. The card will eject.
2. Insert the SD card into an SD card reader (not included) connected to your Mac. Your Mac should load the SD card as a new disk on your desktop.
3. Double-click the disk on your desktop or open it through Finder. Open the folder **MFG**. You should see a folder for each page of recorded video in Playback mode. Folders are named by page number (e.g. recordings found on the second page are in the folder **00000002**).
4. Double-click any of the ASF files. The video will begin playing in your default ASF media player.

12 Scan Mode

In Scan mode, the receiver's LCD screen and speaker will turn off unless motion is detected by one of the cameras. The LCD screen turns on and displays video from the camera where motion was detected for 15 seconds before turning off again. This conserves battery power and alerts you only when needed.

You can configure how much motion is needed to turn the display on in Scan mode by changing a camera's video motion detection settings. See 10.4.3 *Configuring Video Motion Detection*, page 27.

To enable Scan mode:

1. Enter live viewing mode.
2. Press on the front panel of the receiver.
3. Press again to exit Scan mode.

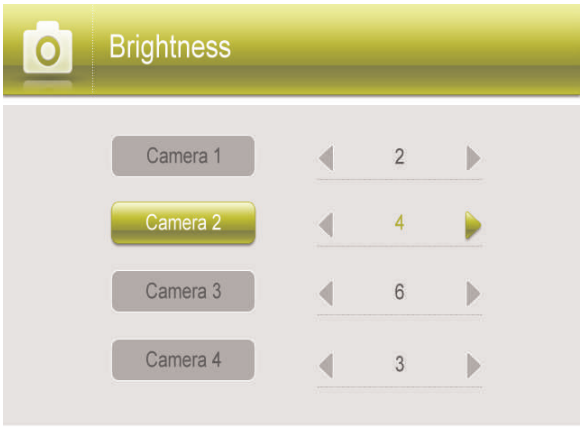
NOTE

When exiting Scan mode, the receiver resumes live viewing in Auto Sequence Viewing mode.

13 Brightness

Adjust the brightness level of video coming from the camera(s).

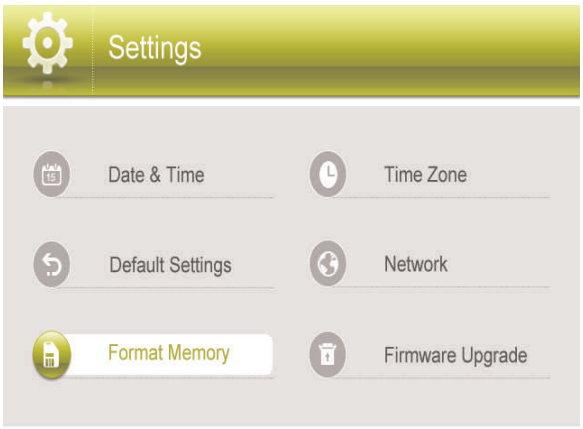
NOTE
You cannot adjust the brightness of the LCD display.



To adjust camera brightness:

1. Press , then select **Camera**. Push the joystick to confirm.
2. Select **Brightness**.
3. Move the joystick up / down to select the camera you wish to configure brightness for.
4. Move the joystick to the right to increase the brightness level for the selected camera, or left to decrease brightness. Camera brightness is measured on a scale of 1-6 where 1 is the darkest and 6 is the brightest. Push the joystick to save changes.
5. Press the button to exit.
6. Repeat steps 1~4 to configure your other cameras as needed.

14 Settings



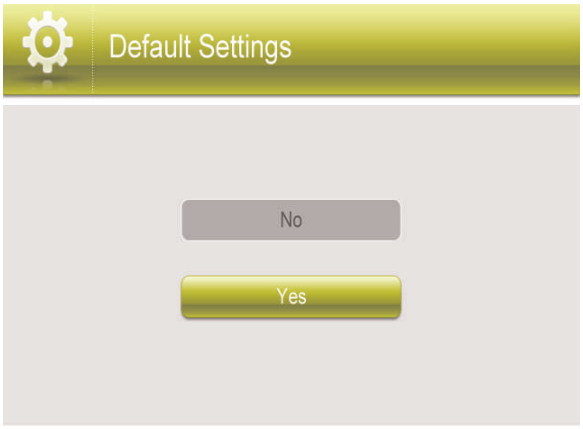
The Settings menu contains the following sub-menus:

- **Date & Time:** Set the date and time on the system. For details, see 9 *Setting the Time*, page 19.
- **Default Settings:** Restore the system to default settings.
- **Format Memory:** Format the SD card.
- **Time Zone:** Select the time zone where the system is being used and enable / disable Daylight Savings Time (DST).
- **Network:** View and configure network settings used for remote connection. You can also reset the remote access password using this menu.
- **Firmware Upgrade:** Upgrade the system's firmware.

14.1 Default Settings

Restoring default settings will return the system to its out-of-the-box state. Any changes you have made to the system settings will be erased.

NOTE
Restoring default settings does not affect files recorded to the memory card or reset the date and time on the system.

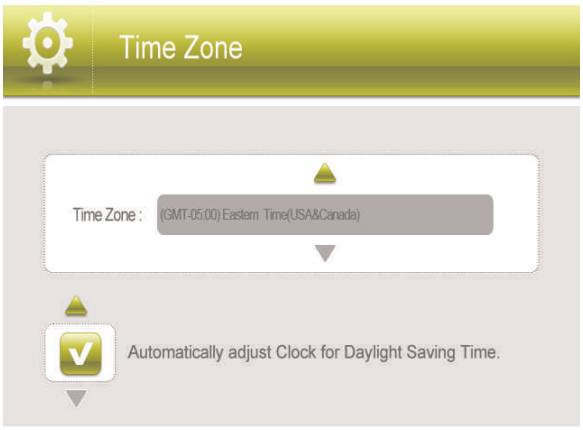


To restore default settings:

1. Press , then push the joystick to select **Settings**.
2. Select **Default Settings** and push the joystick to confirm.
3. Select **Yes** and then push the joystick to confirm. The system takes a few moments to restore default settings.
4. Press until all menus are closed.

14.2 Time Zone

Select the time zone where the system is being used. The time zone menu is also used to enable Daylight Savings Time.



To set the time zone:

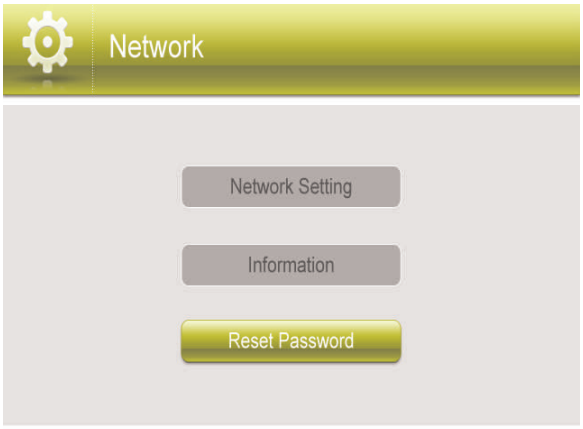
1. Press , then push the joystick to select **Settings**.
2. Select **Time Zone** and push the joystick to confirm.
3. Move the joystick up / down to change the time zone.
4. Push the joystick to save your settings.
   The system time will be automatically updated according to the time zone you have selected.
5. Press until all menus are closed.

To enable / disable Daylight Savings Time:

1. Press , then push the joystick to select **Settings**.
2. Select **Time Zone** and push the joystick to confirm.
3. Move the joystick left / right to select **Automatically adjust Clock for Daylight Savings Time**, then move the joystick up / down to turn Daylight Savings Time on or off.
4. Push the joystick to save your settings.
5. Press until all menus are closed.

14.3 Network

Configure the receiver's IP address (advanced), view network information, or reset your remote access password.



14.3.1 IP Addressing Options

CAUTION
This section is for advanced users only.

To enable dynamic IP addressing:

NOTE
Dynamic IP addressing is enabled by default.

1. Press , then push the joystick to select **Settings**.
2. Select **Network** and push the joystick to confirm.
3. Select **Network Setting**.
4. Select **Dynamic IP**, then select **On**. Push the joystick to confirm.
5. Press until all menus are closed.

To enable static IP addressing:

NOTE
• A static IP address is not required for remote access to the system. • You may have to configure your router settings if the DHCP server is enabled.

1. Press , then push the joystick to select **Settings**.
2. Select **Network** and push the joystick to confirm.
3. Select **Network Setting**.
4. Select **Static IP**.
5. Highlight the **IP Address** field and push the joystick. A cursor appears.
6. Move the joystick up / down to change values, and move the joystick left / right to move the cursor.

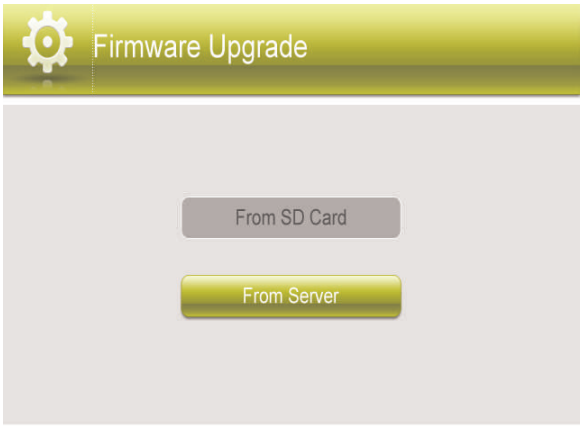
NOTE
Ensure you enter a static IP address that is not in use by another device on your network.

7. Press when finished.

8. Repeat the above process for the **Subnet Mask** and **Default Gateway** fields.
9. Select **OK**, then push the joystick to confirm.
10. Press until all menus are closed.

14.4 Firmware Upgrade

Ensure the system is up-to-date with the latest firmware for optimal performance. There are two ways to upgrade firmware: from the server, or from an SD card.



To update firmware from server:

1. Connect the included Ethernet cable from the Ethernet port on the receiver to your router. The new download icon ( ) appears on the screen if new firmware is available.
2. Press , then push the joystick to select **Settings**.
3. Select **Firmware Upgrade**.
4. Select **From Server**, then select **Yes**.
   The system takes a few moments to install the latest firmware, then reboots.
5. Press until all menus are closed.

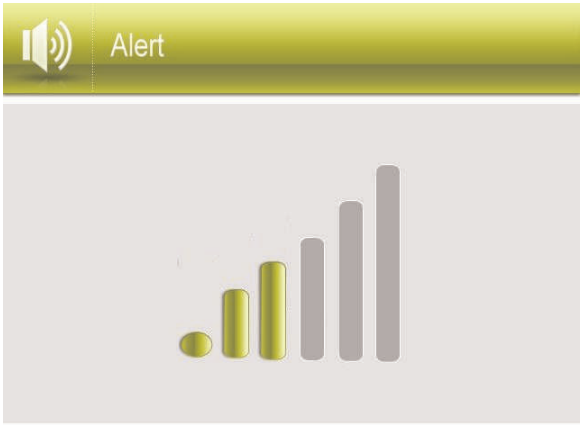
To update firmware from SD card:

1. Insert the SD card into the SD card reader (not included) on your PC or Mac.
2. Download the latest firmware from www.lorextechnology.com and transfer it to the root folder on the SD card.
3. Once the transfer is complete, insert the SD card into the card slot on the receiver.
4. Press , then push the joystick to select **Settings**.
5. Select **Firmware Upgrade** and push the joystick to confirm.
6. Select **From SD Card**.
7. Select **Yes**.
   The system takes a few moments to install the latest firmware.
8. Press until all menus are closed.

15 Alert Volume

Increase or decrease the volume of the buzzer when motion is detected by the camera(s). The alert volume also affects the volume of the 'beep' when you press buttons on the receiver. If you want to turn off the buzzer or button sounds, turn the alert volume to the minimum setting.

NOTE
By default, buzzer and button sounds are turned off.



To increase / decrease alert volume:

1. Press , then select **Alert**. Push the joystick to confirm.
2. Move the joystick right to increase the alarm volume, or left to decrease the alarm volume. Set the volume all the way to the left to disable the alarm buzzer and button sounds.
3. Push the joystick to save your settings.
4. Press until all menus are closed.

16 Pairing Additional Cameras

NOTE

If you have purchased additional cameras, it is highly recommended to pair the cameras to the receiver before permanent installation.

"Pairing" is an electronic handshake between wireless devices. Wireless devices and components need to be paired in order to communicate with each other.

The camera(s) provided with the system have already been paired to the receiver. By default, the camera(s) included are automatically paired to channels 1 & 2 on the receiver. See the channel label on the camera to check which channel it has been set to.

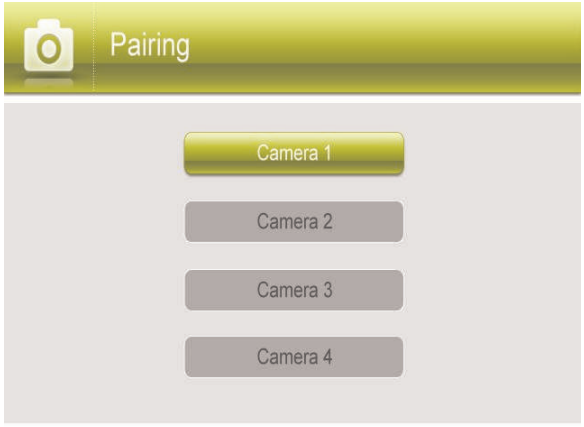
If you have purchased additional accessory cameras, you will need to pair them to the receiver. When pairing cameras, you can select the channel you would like the cameras to be assigned to. You can also use the steps below to reassign your existing cameras to different channels.

NOTE

Accessory cameras (model# **LW2960HAC1**) are available from www.lorextechnology.com.

To pair an additional camera:

1. Connect the new camera to a power outlet. Place the camera and the receiver within 1ft of each other.
2. Press , then select **Camera**. Push the joystick to confirm.
3. Select **Pairing**.
4. Select the channel you wish to pair the camera to.



- If you pair a new camera to a channel that is already being used by an existing camera, the new camera will be connected to that channel. The old camera will automatically be disconnected.

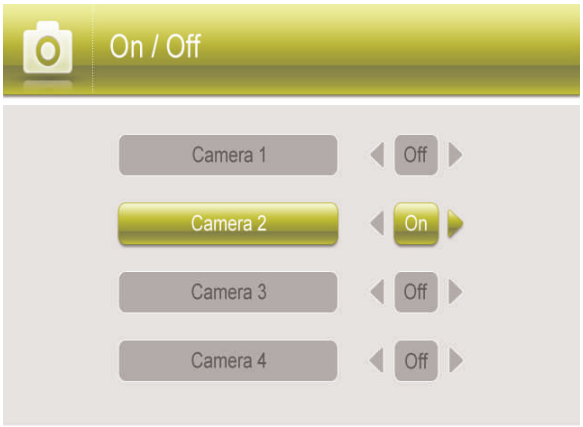
5. Following the on-screen prompt, press the **Pair** button behind the camera. You have 30 seconds to press the **Pair** button on the camera. Once paired, the camera will be immediately displayed on-screen.

NOTE

- If you do not press the **Pair** button on the camera during the 30 second pairing window, repeat steps 2~5 to try the pairing process again.
- If the speaker begins squealing, move the camera and receiver away from each other.

17 Camera On/Off

Use the Camera On / Off menu if you need to disable empty channels so they do not appear on the monitor in any viewing mode. You only need to do this if you have moved a camera to a different channel using the pairing function.



To show / hide channels:

1. Press , then select **Camera**. Push the joystick to confirm.
2. Select **Camera On/Off**.
3. Move the joystick up / down to select the desired camera and left / right to select **On** to show the camera or **Off** to hide it.
4. Push the joystick to save changes.
5. Press the button to exit.

NOTE
Any disabled channels will be blacked out in Quad mode.

18 Using the Mobile App

Use the free Lorex SD Pro app to conveniently connect to your system on a smartphone / tablet. The mobile app is free with no recurring fees. View live video from the camera(s) from anywhere with an Internet connection.

18.1 System Requirements

- You must have a high-speed Internet connection to view live video using the mobile app. Traffic congestion may result in choppy video.
- When using a mobile cellular network, data charges may apply. Check with your provider for details.
- For the latest list of supported apps and devices, visit www.lorextechnology.com.

18.2 Lorex SD Pro for iOS Devices

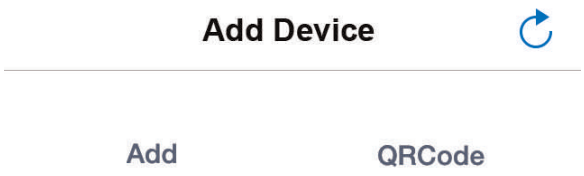
18.2.1 Getting Started

Use the following instructions to view your camera(s) over the Internet using your iPhone® or iPad®.

1. Connect the included Ethernet cable from the Ethernet port on the LCD receiver to your wireless router. The network icon on the receiver turns green ( ).
   - You may need to turn the receiver off and on again for it to connect to your network.
2. Connect to your home WiFi Internet using your smartphone or tablet. See the user guide provided with your iPhone® or iPad® for details.
3. Download the free Lorex SD Pro app from the App Store.

NOTE
For iPad users, check on the app store for iPhone app.

4. Tap the Lorex SD Pro icon ( ).
5. Tap Add Device.
6. Tap **QRCode** to scan the QR code on the back of the receiver.
   OR
   Tap **Add** if your mobile device does not have a camera.



You can also tap to search for the system on the network. This option is only available if your smartphone or tablet is connected to the same network as the receiver.

7. Enter a personalized name for the system in the **Name** field, then enter the password in the **Password** field (default **000000**).

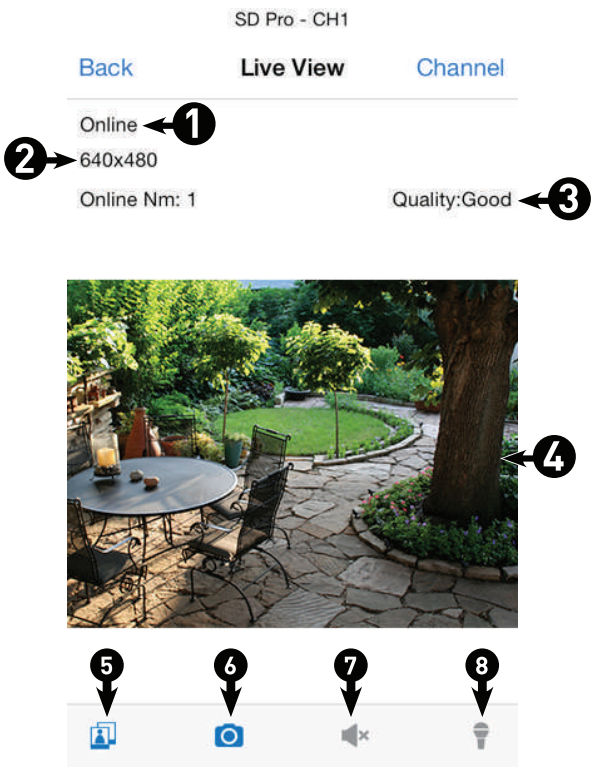
> **NOTE**
>
> If you tapped **Add** in the previous step, enter the UID number printed on the QR code label on the back of the receiver. Otherwise, the **UID** field will be populated automatically.

8. Tap **Save**. The system will show in your device list with an "Online" status.
9. Tap the name of the system. You will be asked to enter a new, secure password. Write your password down for future reference: _____

Live video from the camera(s) appears on your smartphone or tablet.

> **NOTE**
>
> It is recommended to keep the receiver connected to an electrical outlet so the battery does not lose power.

18.2.2 Live Viewing



1. **Network status**
2. **Viewing resolution:** Streaming resolution for the video feed.
3. **Video quality:** Speed of video decoding. Higher quality results in greater bandwidth consumption, which requires a higher connection speed. Reduce quality if video is choppy.
4. **Live video**
5. **Image gallery:** Tap to view snapshot images taken using the app.

6. **Snapshot:** Tap to take a snapshot of the current video display. You can also share snapshots via e-mail. See 18.2.7 *Sharing Snapshots*, page 49.
7. **Mute:** Tap to mute or unmute sound from the current camera.
8. **Intercom:** Tap to enable two-way audio with the currently selected camera. Tap again to disable or listen for a response.

18.2.3 Event Log

If you have enabled motion recording on the system, use the event log to review motion-based events. Each event is stamped with the date and time when the event took place, as well as the camera that captured the event. These events are uploaded from the memory card inserted into the receiver. If the memory card is removed, the events will not be accessible.

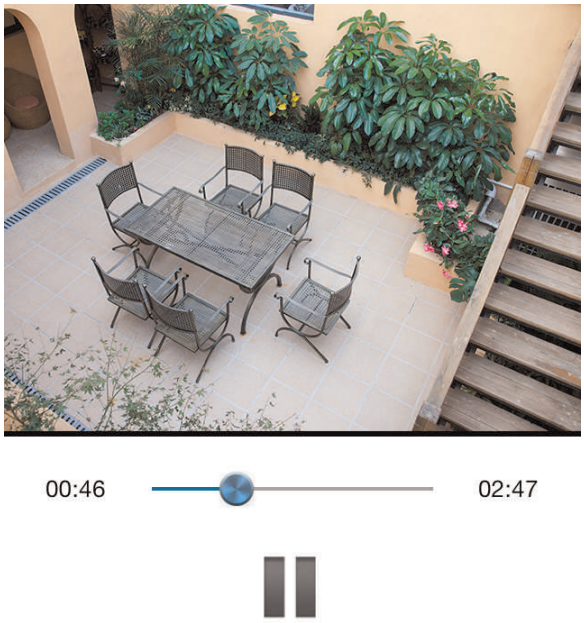
NOTE

Date and time stamps are created using the date and time on your smartphone or tablet and not the receiver.

To open the event log:

1. Tap Event.
2. Tap the UID for the system.
   A list of events appears from the last half day. If you wish to view an event which took place prior to the current date, use the search feature detailed below.
3. Tap an event to preview the video recording.

4. Use the buttons to control video playback:
   - Tap and drag the progress bar to change playback time.
   - Tap ▶ / ⏸ to start / stop playback.
   - Tilt your smartphone or tablet to view in landscape mode, or hold upright to view in portrait mode.



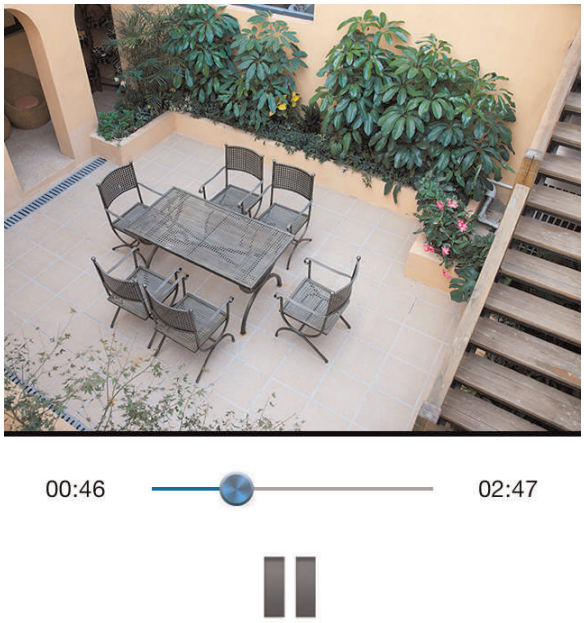
NOTE
Only one device may use video playback at a time.

You can also search for events by specifying a time frame or specific channels.

To search for events:

1. Tap Event.
2. Tap the UID for the system.
   A list of events appears.
3. From the event list, tap Search.
4. Choose a time frame to search for video, or tap **Custom** to configure the start time, end time, and channels included. Tap **Done** to begin the search.
   A list of recordings that meet the specifications of your search appears.
5. Tap any recording to preview it on your device.

6. Use the buttons to control video playback:
   - Tap and drag the progress bar to change playback time.
   - Tap ▶ / ⏸ to start / stop playback.
   - Tilt your smartphone or tablet to view in landscape mode, or hold upright to view in portrait mode.



NOTE

Only one device may use video playback at a time.

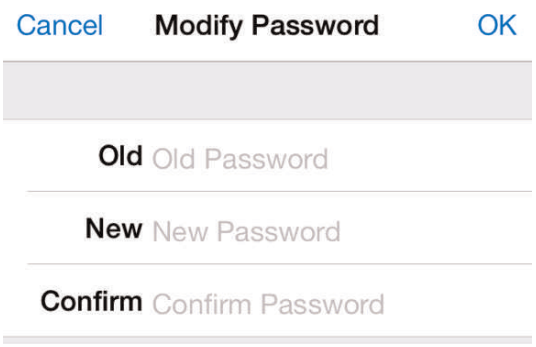
18.2.4 Modify Password

Change the password used for remote access to the system. You can also revert the password to the default directly on the receiver (default password: **000000**).

To modify your password:

1. Tap ⓘ next to the system name.
2. Tap **Advanced Setting**.
3. Tap **Modify Password**.

4. Enter the following information:



- **Old:** Enter the current password for the system.
- **New:** Enter a new password.
- **Confirm:** Reenter the new password.

5. Tap **OK**.

To revert to the default password:

1. Press , then push the joystick to select **Settings**.
2. Select **Network**.
3. Select **Reset Password**.
4. Select **Yes**.
   Press to exit.

18.2.5 Setting Alert Interval

The alert interval determines the minimum amount of time between motion alerts on your smartphone / tablet. You may want to increase the interval length to decrease the frequency of alerts on your smartphone / tablet, or even turn smartphone / tablet alerts off. By default, the alert interval is set to 3 minutes.

1. Ensure that your smartphone / tablet has push notifications enabled. See the instruction manual provided with your mobile device for details.
2. Tap next to the system name.
3. Tap **Advanced Setting**.
4. Tap **Alert Interval**.
5. Tap one of the time intervals to set the minimum time between motion alerts. Select **OFF** to turn off motion alerts on your smartphone / tablet.

18.2.6 Setting Video Quality

Video quality affects the smoothness of the live video feed on your smartphone or tablet. Video smoothness is affected by connection speed.

1. Tap next to the system name.
2. Tap **Advanced Setting**.
3. Tap **Video Quality**.
4. Tap **High**, **Medium**, or **Low**. High video quality results in the most bandwidth consumption, which requires a high speed connection. Reduce quality if video is choppy.

18.2.7 Sharing Snapshots

Share snapshots with friends and family via e-mail.

1. Tap

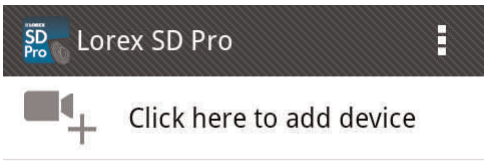
.
2. Tap the name of the system you wish to share snapshots from.
3. Tap .
4. Tap the snapshot you want to share, then tap .
5. Select **Email Photo** to share the snapshot.
6. Enter the recipient's email address and tap **Send**.

18.3 Lorex SD Pro for Android Devices

18.3.1 Getting Started

Use the following instructions to view your camera(s) over the Internet using your Android™ smartphone or tablet.

1. Connect the included Ethernet cable from the Ethernet port on the LCD receiver to your wireless router. The network icon on the receiver turns green ( ).
   - You may need to turn the receiver off and on again for it to connect to your network.
2. Connect to your home WiFi Internet using your smartphone or tablet. See the user guide provided with your Android™ device for details.
3. Download the freeLorex SD Pro app from the Google Play Store.
4. Tap the Lorex SD Pro icon ( ).
5. Tap **Click here to add device**.



6. Enter a personalized name for the system in the **Name** field, then enter the password (default **000000**).
7. Tap **Scan** to scan the QR code.
   OR

   Enter the UID number manually. The UID number is printed below the QR code on the back of the receiver.
8. Tap **OK**. The system will show in your device list with an "Online" status.
9. Tap the name of the system. You will be asked to enter a new, secure password. Write your password down for future reference: _____

Live video from the camera(s) appears on your smartphone or tablet.

NOTE
It is recommended to keep the receiver connected to an electrical outlet so the battery does not lose power.

18.3.2 Live Viewing

1. **System information:** The system name followed by the channel currently displayed.
2. **Network status**
3. **Viewing resolution:** Streaming resolution for the video feed.
4. **Channel button:** Tap to choose which channel to display.
5. **Video quality:** Speed of video decoding. Speed of video decoding. Higher quality results in greater bandwidth consumption, which requires a higher connection speed. Reduce quality if video is choppy.
6. **Live video**
7. **Image gallery:** Tap to view snapshot images taken using the app.
8. **Snapshot:** Tap to take a snapshot of the current video display. See 18.3.5 *Viewing Snapshots*, page 54
9. **Mute:** Tap to mute or unmute sound from the current camera.
10. **Intercom:** Tap to enable two-way audio with the currently selected camera. Tap again to disable or listen for a response.

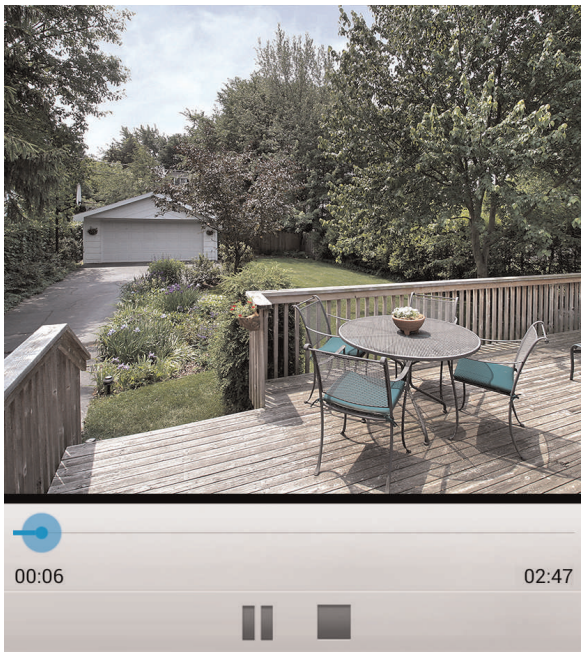
18.3.3 Event Log

If you have enabled motion recording on the system, use the event log to review motion-based events. Each event is stamped with the date and time when the event took place, as well as the camera that captured the event. These events are uploaded from the memory card inserted into the receiver. If the memory card is removed, the events will not be accessible.

NOTE
Date and time stamps are created using the date and time on your smartphone or tablet and not the receiver.

To open the event log:

1. Tap next to the system name.
2. Tap **View Event**.
   A list of events appears from the last half day. If you wish to view an event which took place prior to the current date, use the search feature detailed below.
3. Tap an event to preview the video recording.
4. Use the buttons to control video playback:
   - Tap and drag the progress bar to change playback time.
   - Tap ▶ / ⏸ to start / pause playback, or tap ■ to stop playback.
   - Tilt your smartphone or tablet to view in landscape mode, or hold upright to view in portrait mode.



NOTE

Only one device may use video playback at a time.

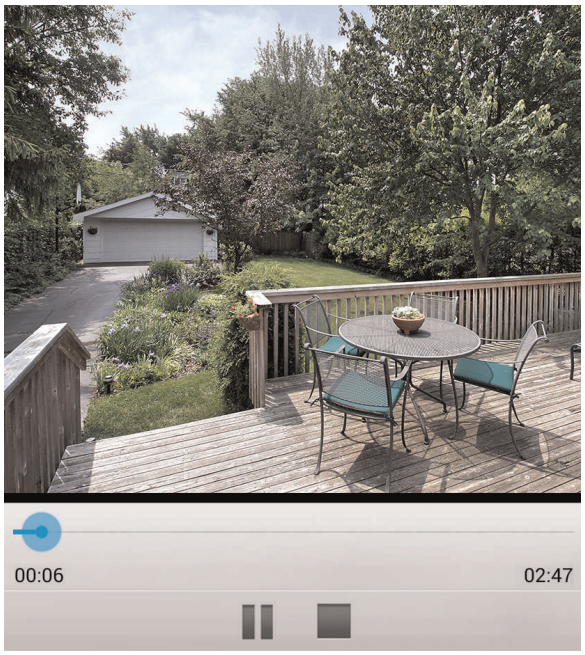
You can also search for events by specifying a time frame or specific channels.

To search for events:

1. Tap next to the system name.

2. Tap **View Event**.

3. Tap .
4. Choose a time frame to search for video, or tap **Custom** to configure the start time, end time, and channels included. Tap **Done** to begin the search.
   A list of recordings that meet the specifications of your search appears.
5. Tap any recording to preview it on your device.
6. Use the buttons to control video playback:
   - Tap and drag the progress bar to change playback time.
   - Tap / to start / pause playback, or tap to stop playback.
   - Tilt your smartphone or tablet to view in landscape mode, or hold upright to view in portrait mode.



NOTE
Only one device may use video playback at a time.

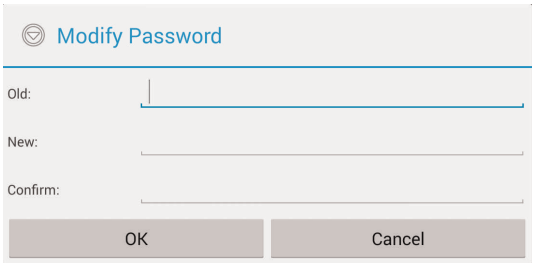
18.3.4 Modify Password

Change the password used for remote access to the system. You can also revert the password to the default directly on the receiver (default password: **000000**)

To modify your password:

1. Tap next to the system name.
2. Tap **Edit Device**.

3. Tap **Advanced**.
4. Tap **Modify Password**.
5. Enter the following information:



- **Old:** Enter the current password for the system.
- **New:** Enter a new password.
- **Confirm:** Reenter the new password.

6. Tap **OK**.

To revert to the default password:

1. Press , then push the joystick to select **Settings**.
2. Select **Network**.
3. Select **Reset Password**.
4. Select **Yes**.
5. Press to exit.

18.3.5 Viewing Snapshots

View snapshots taken with the cameras using the app.

1. Tap next to the system name.

2. Tap **View Snapshot**.

3. Tap any picture to view it in full screen.

18.3.6 Setting Alert Interval

The alert interval determines the minimum amount of time between motion alerts on your smartphone / tablet. You may want to increase the interval length to decrease the frequency of alerts on your smartphone / tablet, or even turn smartphone / tablet alerts off. By default, the alert interval is set to 3 minutes.

1. Ensure that your smartphone / tablet has push notifications enabled. See the instruction manual provided with your mobile device for details.
2. Tap next to the system name.
3. Tap **Edit Device**.

4. Tap **Advanced**.
5. Tap **Alert Interval**.
6. Tap one of the time intervals to set the minimum time between motion alerts. Select **Unlimited** to receive alerts whenever a motion event occurs, or select **OFF** to turn off motion alerts on your smartphone / tablet.

18.3.7 Setting Video Quality

Video quality affects the smoothness of the live video feed on your smartphone or tablet.

1. Tap next to the system name.
2. Tap **Edit Device**.

3. Tap **Advanced**.
4. Tap the dropdown menu next to **Video Quality**.

5. Tap **High**, **Medium**, or **Low**. High video quality results in greater bandwidth consumption, which requires a high speed connection. Reduce quality if video is choppy.

19 Technical Specifications

19.1 General

Description	Specification
Transmission Frequency	2,400 ~ 2,43.5MHz
Transmission Power	16dBm
Data Rate	4 Mbps
Unobstructed Wireless Range	660ft (200m) outdoors / 165ft (50m)indoors
Spread Spectrum	FHSS
Modulation	GFSK
Operating Temperature	14 ~ 104°F / -10 ~ 40°C
Operating Humidity	< 85%

19.2 Camera

Description	Specification
Image Sensor	1/4" CMOS Image Sensor
Supported Resolutions	VGA (640x480) up to 30 fps QVGA (320x240) up to 30 fps
Minimum Illumination	< 5Lux (IR on) / > 30Lux (IR off)
AGC	Auto
AES Speed	1/60~1/1000 Second
IR LEDs	16 pieces
Night Vision Range	65ft (20m) / 45ft (14m)
PIR Range	21ft (6.5m)
Lens / Lens Type	3.6mm F2.0 / Fixed
View Angle	Diagonal 69°
Power Consumption	Max 400mA (IR on) Max 290mA (IR off)
Power Supply	9V DC 600mA ±5%
Operating Temperature	14 ~ 122°F / -10 ~ 50°C
Dimensions	W: 92mm, L: 210mm, H: 129mm
Weight	0.55lbs / 0.24kg

19.3 Receiver

Description	Specification
Display	7” diagonal
LCD Resolution	800x480
Receiving Sensitivity	-88dBm
Image Processing	MPEG4
Battery	2000mah 3.7V
Power Consumption	Max 1.3A
Power Supply	9V DC 600mA ±5%

Description	Specification
Operating Temperature	32 ~ 104°F / 0 ~ 40°C
Dimensions	W: 33mm, L: 184mm, H: 135mm
Weight	0.95lbs / 0.44kg

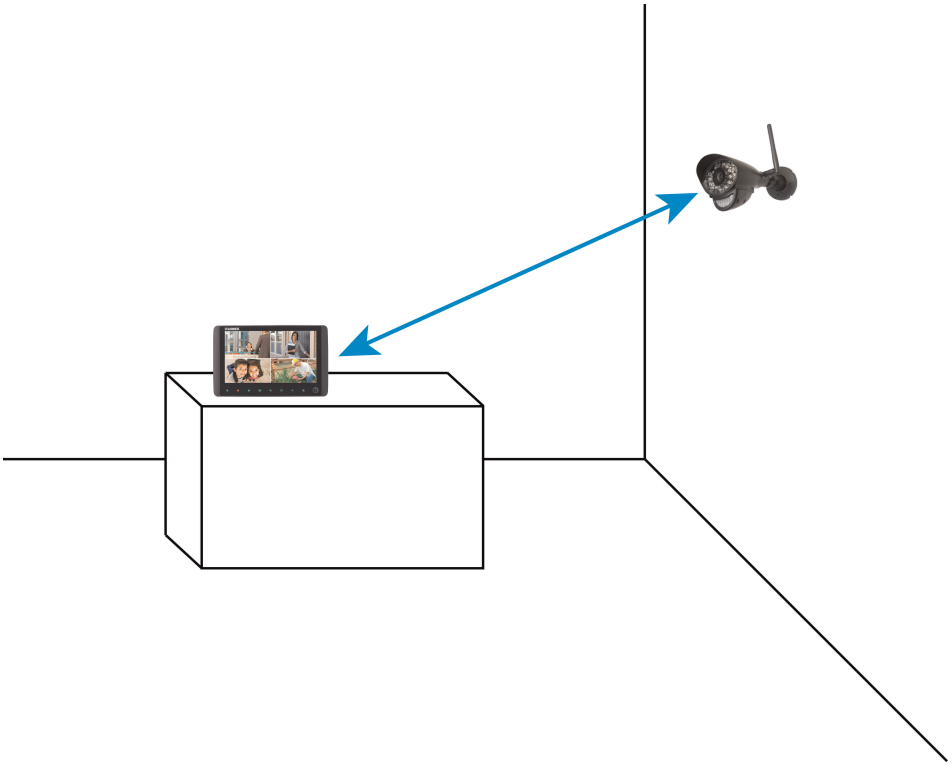
As our products are subject to continuous improvement, Lorex Corporation and its subsidiaries reserve the right to modify product design, specifications, and prices without notice and without incurring any obligation. E&OE

20 Strengthening the Range of the Wireless Signal

There are a few things you should consider when selecting a location for the receiver and camera(s) that will help to boost your wireless signal.

20.1 Clear Line-of-Sight

The digital wireless signal is virtually interference free. However, you should always ensure there is a clear line-of-sight between the camera and the receiver.



20.2 Obstacles

There should be little to no obstacles obstructing the line-of-sight between the camera and the receiver. Solid objects, such as concrete and metal may limit the range of the wireless signal.

21 Troubleshooting

Problem	Solution
There is no picture from the camera(s)	• Check power to the camera. • Make sure that the cameras and receiver are both ON. • Make sure that the camera is in range of the receiver. • The battery is dead. Connect the receiver to a power outlet using the included power adapter. • The receiver is in Scan mode. Press to exit Scan mode.
The picture is dropping	• Move the camera closer to the receiver. • Try repositioning the camera, receiver or both to improve the reception. • Ensure you have raised the antenna(s) on the receiver.
The picture is or has become choppy	• The picture may become choppy when experiencing a lower frame rate due to reduced signal strength (i.e. 10 frames per second vs. a higher 20 frames per second). • Try moving the camera closer to the receiver. • Remove obstructions between the receiver and camera.
The picture is white	• Common situation know as "washout" or "whitewash" where a strong light source is pointed at the camera lens. The camera lens IS NOT harmed during a whitewash. • DO NOT point your camera towards a light source.
Bright spot in image while viewing camera at night	• This occurs when a camera is pointed at a window to see outside, because the night vision LED's produce Infrared light that reflects off the glass. If you need to look outside, install the camera outdoors. Please note that the camera **must** be installed under shelter when placed outdoors.
There is no audio from the camera(s)	• Make sure you have removed the protective film from the camera lens. • Make sure the receiver volume is not muted. Turn the receiver volume up.
Cannot hear audio when I speak	• You must release the talk button ( ) in order to listen to audio from the camera(s).
Cannot connect to the system remotely	• Make sure the receiver is powered on. You **must** connect the receiver to a local power outlet during remote monitoring. • Make sure you have connected the receiver to your router using the included Ethernet cable. • Make sure the receiver shows a green network icon on the LCD display. If the icon is red, you may need to turn the unit off and on again.
Cannot view events on mobile device	• The memory card has been removed from the receiver. Insert a memory card with motion recordings stored on it into the receiver to view events on your smartphone / tablet.

22 Frequently Asked Questions

Q: Does a wireless camera require power?

A: Yes. Wireless cameras require two power sources: one connected to the camera, and the other to the receiver. The term "wireless" refers to the lack of a video cable between the camera and the receiver.

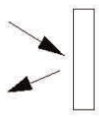
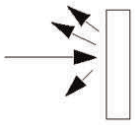
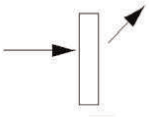
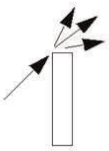
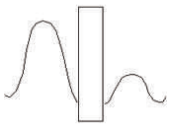
Q: How far can a wireless camera transmit a video signal?

A: In an open field (with line of sight), a typical wireless camera has a range between 250 - 500 feet. 'Line-of-sight' means that there are no obstructions between the camera and receiver. Obstructions include walls, buildings, trees, and certain electronic devices. Materials containing moisture (for example, leaves) may also act as an obstruction. Cubical walls, drywall, glass, and windows generally do not degrade wireless signal strength.

In a closed environment—such as the interior of a house—the wireless camera range is between 100 - 165 feet. The signal range varies depending on the type of building materials or objects the wireless signal must pass through.

The signal range also depends on whether there are competing signals using the same frequency as the camera. For example, signals from cordless phones or routers may affect signal strength. Adaptive Frequency Hopping Spread Spectrum (FHSS) technology featured in the latest Lorex models greatly reduces signal interference.

Range Limiting Factors[1]

				
Reflection	**Scattering**	**Refraction**	**Diffraction**	**Attenuation**
The signal reflects back	The signal scatters back into multiple new signals	The signal bends as it travels through an object (e.g. glass window)	The signal changes direction as it passes around an object	The signal strength weakens as it passes through an object

NOTE

1. Source: Xirrus (2010). "Wi-Fi Range Dynamics". Retrieved online at http://xirrus.gcsmarket.com/pdfs/Xirrus_Wi-Fi_Range.pdf

Signal Reduction Through Materials

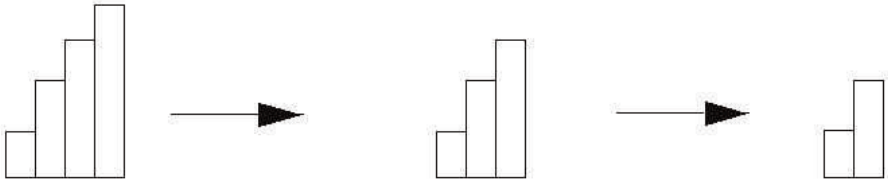
Signal strength decreases as it passes through different types of material. The table below shows how signals become reduced when passing through different materials:

Material	Signal Reduction (%)
Plaster & Wood	10 - 30%
Brick	30 - 50%
Concrete Cinder Blocks	50 - 70%
Metal & Metal Cladding	70 - 90%

NOTE

Signals that must pass through wet or moist materials (e.g. shrubs and trees) may be significantly reduced.

The stronger the signal strength, the higher the video frame rate. The lower the signal strength, the lower the video frame rate.



Full signal strength
(high frame rate)

Low signal strength
(low frame rate)

Q: Are digital wireless camera signals secure?

A: Yes. Lorex digital wireless products feature a wireless transmission method called Frequency Hopping Spread Spectrum (FHSS). This type of signal is highly resistant to eavesdropping as it generates a channel hopping sequence using an algorithm generated by the receiver, which only the camera can follow through the "pairing" function.

Pairing is an electronic handshake between digital wireless devices. Digital wireless cameras can only be paired to one receiver. This is to prevent interception by third parties, and prevents any other device from picking up the signal—this also means that you cannot pair one camera to multiple receivers.

Q: How many frames per second should I expect from a digital wireless camera?

A: Current Lorex digital wireless cameras offer 10 - 30 FPS (Frames Per Second) performance. Actual frame rate depends mainly on signal strength (see the chart in section above).

23 Notices

WARNING

Infants have been STRANGLED in power cords. Keep power cords more than 3 feet away from cribs, bassinets, play yards and other safe sleep environments for infants.

23.1 FCC Notice

This equipment has been certified and found to comply with the limits regulated by the FCC part 15, subpart C. Operation is subject to the following two 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 equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception (which can be determined by turning the equipment on and off), the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio or television technician for assistance

WARNING

To ensure compliance with the FCC's RF exposure guidelines, this equipment should be installed and operated with minimum distance 20cm (7.87in) between the radiator and nearby persons.

23.2 Industry Canada Notice

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1)This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesirable operation.

This Class B digital apparatus complies with Canadian ICES-003.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

23.3 Modification

Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the device.

Toute modification non approuvée explicitement par le fournisseur de licence de l'appareil peut entraîner l'annulation du droit de l'utilsateur à utiliser l'appareil.

23.4 RoHS

This product is fully compliant with the European Union Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment ("RoHS") Directive (2002/95/EC). The RoHS directive prohibits the sale of electronic equipment containing certain hazardous substances such as lead, cadmium, mercury, and hexavalent chromium, PBB, and PBDE in the European Union.

NOTE

- It is imperative that the user follows the guidelines in this manual to avoid improper usage which may result in damage to the product, electrical shock, and fire hazard injury. In order to improve the features, functions, and quality of this product, the specifications are subject to change without notice from time to time.
- Please see the label on your device for FCC/IC certification numbers.

Website

www.lorextechnology.com

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