



WIRELESS SECURITY CAMERA WITH AUDIO

USER'S GUIDE

LW2277

Version 1.0

ENGLISH

FRANÇAIS

ESPAÑOL



VANTAGE

LW2277



Safety Precautions

- Read this guide carefully and keep it for future reference.
- Follow all instructions for safe use of the product and handle with care.
- Use the camera within given temperature, humidity, and voltage levels noted in the Technical Specifications.
- Do not disassemble the camera.
- Do not point the camera directly towards the sun or a source of intense light.
- For outdoor use, installation in a sheltered location is recommended.
- Periodic cleaning may be required. Use a damp cloth only. Do not use harsh cleaners or aerosol cleaners.
- 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, paying particular attention to cords at plugs.
- Slots and openings in the case are provided for ventilation to ensure reliable operation of the video product and to protect it from overheating. These openings must not be blocked or covered.
- Do not use attachments unless recommended in the instructions as they may cause a hazard.
- The cameras provided with this system should be mounted to a wall or ceiling only as instructed in this guide, using the provided mounting brackets.
- Never push objects for any kind into this video product through openings.
- Never spill liquid of any kind on the video product.
- It is recommended to use a surge protector with this video product.
- The wireless receiver is not weatherproof. Install the receiver in an indoor location only.

Legal Notice Regarding Audio Recording

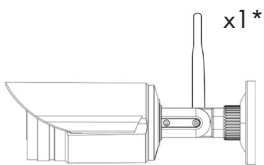
Audio recording without consent is illegal in certain jurisdictions. Lorex Technology Inc. assumes no liability for use of its products that does not conform with local laws.

Table of Contents:

Product Includes.....	2
Wireless Receiver.....	3
Wireless Camera.....	4
Installing the Camera.....	5
Installation Tips & Warnings.....	5
Mounting Positions.....	5
To Install the Camera.....	6
Connecting to a DVR.....	8
Connecting to a TV.....	9
On-Screen Display.....	10
Pairing Cameras.....	11
Appendix A:	
Technical Specifications.....	12
Camera.....	12
Receiver.....	12
Dimensions.....	13
Appendix B:	
Frequently Asked Questions.....	14
Appendix C: Extending	
Wireless Signal Range.....	17
Appendix D: Troubleshooting.....	19
Need Help?.....	19

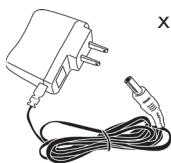
Product Includes

Check your package to confirm that you have received the complete system, including all components shown below.



x1*

Camera



x1*

Power Adapter

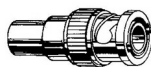


x3*



x3*

Screws & Anchors



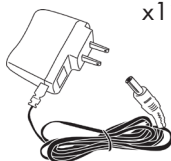
x1*

RCA-to-BNC Adapter



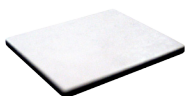
x1*

Receiver



x1*

Power Adapter



x1*

Double-Sided Tape

* Number of cameras and receivers may vary by model.

Wireless Receiver

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1

Removable Wireless Antenna (SMA):

Connects to antenna jack on the back of the receiver.

2

Resolution button:

Press to switch between VGA and QVGA resolution¹.

3

Front LED:

Glows green to indicate the receiver is powered on.

4

Pairing button:

For details, see See "Pairing Cameras" on page 11.

5

Termination cable:

Contains power, RCA video, and RCA audio connectors.

6

Antenna jack:

Connection point for the wireless antenna.



1. VGA mode has a resolution of 640 X 480 pixels; QVGA mode has a resolution of 320 X 240 pixels. Use VGA mode for best video performance. Use QVGA mode for a higher video frame rate.

Wireless Camera



1

Removable Wireless Antenna (SMA):

Connects to antenna jack on the back of the camera.

2

Camera stand

3

Microphone

4

Pairing button:

For details, See "Pairing Cameras" on page 11.

5

AC Power Cable

6

Antenna jack:

Connection point for the wireless antenna.

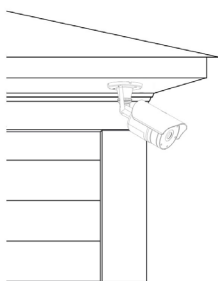


ATTENTION: This camera includes an Auto Mechanical IR Cut Filter. When the camera changes between Day/ Night viewing modes, an audible clicking noise may be heard from the camera. This clicking is normal and indicates that the camera filter is working.

Installing the Camera



Cameras are suitable for outdoor installation. Installation in a sheltered location is recommended. For example, install under shelter protected from the elements, such as beneath roof eaves. The diagram to the right shows an example of an ideal location for outdoor placement.



Installation Tips & Warnings

- Aim the cameras to best optimize the viewing area: select a location for the camera that provides a clear view of the area you want to monitor.
- Install camera in an area that is free from dust, and that is not in line-of-sight to a strong light source or direct sunlight.
- Avoid installing the camera where there are thick walls or obstructions between the camera and the receiver.
- Avoid installing in a location which requires the wireless signal to pass through cement, concrete, and metal structures. This will reduce the range of transmission. For details, see "Appendix B: Frequently Asked Questions" on page 14.
- Select a location for the camera that has an ambient temperature between 14°F ~ 122°F (-10°C ~ 50°C).
- Not intended for submersion in water. For outdoor use, installation in a sheltered location is recommended.

Mounting Positions

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



WALL



CEILING

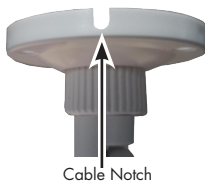


COUNTER

To Install the Camera

NOTE: Before you begin, decide whether to run the power cable through the wall / ceiling (drilling required) or along the wall / ceiling.

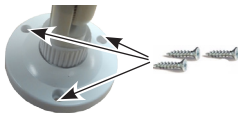
If you run the cable along the wall / ceiling, you must run it through the cable notch on the base. This will keep the camera base flush to the surface when mounted.



1

Use the included mounting screws to mount the camera to the mounting surface:

- Mark the position of the screw holes on the wall.
- Drill holes and insert the drywall plugs (included) as needed.
- Firmly attach the stand to the wall using the provided screws.



2

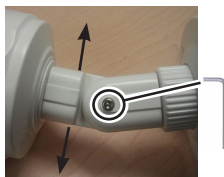
Adjust the position and angle of the camera until the desired view is set:

A



A) Turn the adjustment ring to tighten / loosen the stand connection. Adjust the camera's horizontal position.

B



B) Loosen lower screw with the included Allen key to adjust the camera's vertical position.

C



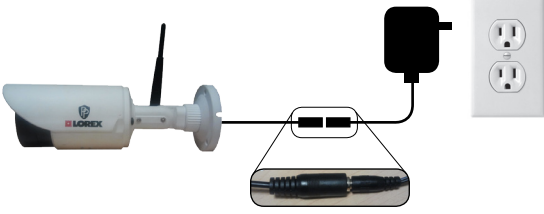
C) Loosen upper screw with the included Allen key to rotate the camera housing.

3

Screw the antenna to the back of the camera.

4

Connect the power cable from the camera to the power adapter. Plug the power adapter into a power outlet or surge protector.

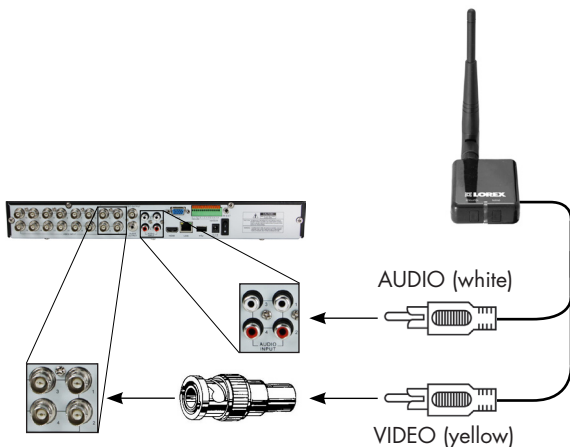


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Connecting to a DVR



Before powering on the receiver, make sure to first connect and power on the camera. This will ensure a proper connection.



1 Screw the antenna to the back of the receiver.

2 Connect the RCA-to-BNC adapter (included) to the yellow video cable. Connect the yellow video cable to a BNC video input on your recording device.

3 Connect the white audio input cable to an audio input on your recording device.

NOTE: The audio input number or name should match the video input where you connect the video input (e.g. Video Input 1 and Audio Input 1).

4 Connect the power cable to the power adapter. Plug the power adapter into a power outlet or surge protector.

5 Place the receiver in a place that will have clear reception to your camera¹.

6 **OPTIONAL:** Use the included double-sided tape to attach the wireless receiver to a flat surface (e.g. a desk or a wall).

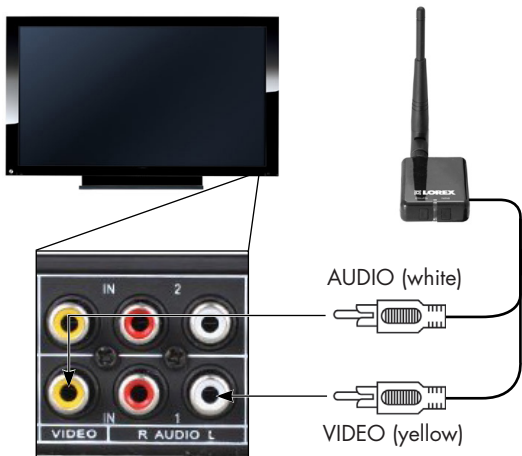
1. Avoid installing in a location which requires the wireless signal to pass through cement, concrete, and metal structures. This will reduce the range of transmission.

Connecting to a TV

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Before powering on the receiver, make sure to first connect and power on the camera. This will ensure a proper connection.



1 Screw the antenna to the back of the receiver.

2 Connect the yellow video input cable to a video input on your recording device.

3 Connect the white audio input cable to an audio input on your recording device.

NOTE: The audio input number or name should match the video input (e.g. Video Input 1 and Audio Input 1).

4 Connect the power cable to the power adapter. Plug the power adapter into a power outlet or surge protector.

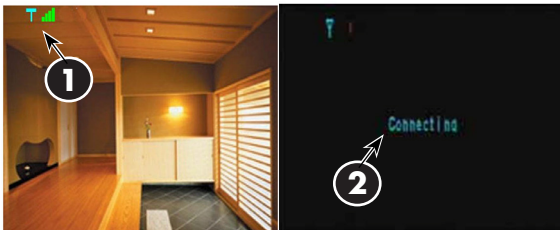
5 Place the receiver in a place that will have clear reception to your camera¹.

6 **OPTIONAL:** Use the included double-sided tape to attach the wireless receiver to a flat surface (e.g. a desk or a wall).

7 Power on your television and select the input that the receiver is connected to.

1. Avoid installing in a location which requires the wireless signal to pass through cement, concrete, and metal structures. This will reduce the range of transmission.

On-Screen Display



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. Four bars indicate a very strong signal.

2

Status indicator:

The message "Connecting" appears when the receiver is trying to locate a camera.

ATTENTION: If the signal is low (e.g. 1 or 2 bars) adjust the antennas or reposition the camera or receiver to improve signal strength.

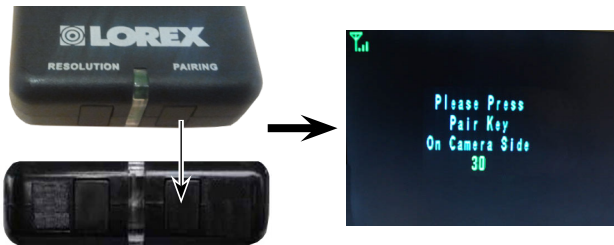
Pairing Cameras



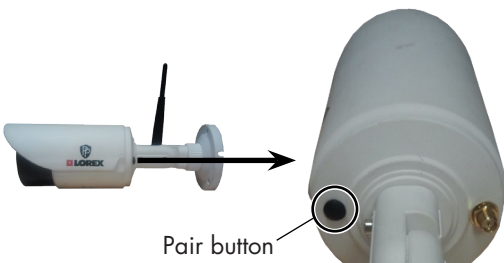
The camera and receiver have already been pre-paired out of the box, which means that they are exclusively communicating with each other. If for some reason the pairing is lost, follow these steps to pair up the camera and receiver.

To pair the camera to the receiver:

- 1** Make sure that the camera and receiver are both powered up.
- 2** On the receiver, press and hold the **PAIRING** button for 5 seconds to activate the pairing function.
 - The on-screen displays informs you that you have 30 seconds to press the pair button on the camera.



- 3** Press the black pair button on the back of the camera. You must press the pair button on the camera within 30 seconds of pressing the **PAIRING** button on the wireless receiver.



If pairing is successful, live video from the camera will immediately appear on the monitor.

Appendix A: Technical Specifications

Camera

Frequency	2.400~2.480GHz
TX Power	16dBm
AGC	On
Maximum Range	Up to 500ft / 150m outdoors* Up to 165ft / 50m indoors*
Image Sensor	1/4" Color CMOS
Effective Pixels	H: 640, V: 480
Lens	4.5mm F1.5
Field of View (Diagonal)	68°
AES Shutter Speed	1/60 ~ 1/62,500
Night Vision Range ¹	Up to 140ft (43m) / 100ft (30m)
IR LED	18 pcs
Power Adapter	12.0V DC 500mA
Power Consumption	455mA Max with IR LED 130mA Max without IR LED
Operating Temperature Range	14°F ~ 122°F (-10°C ~ 50°C)
Indoor / Outdoor	Both (IP66)
Weight	0.6lbs / 0.3kg

Receiver

Frequency	2.400~2.480GHz
RX Sensitivity	-81dBm
Demodulation	GFSK
Data Rate	160Kb/s
Supported Resolution	VGA (640 x 480) up to 12 FPS ² QVGA (320 x 240) up to 30 FPS
Termination	1x RCA video, 1x RCA audio
Power Adapter	12.0V DC 500mA
Power Consumption	130mA Max
Weight	0.2lbs / 0.1kg

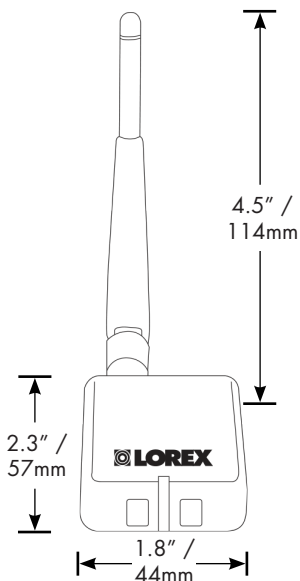
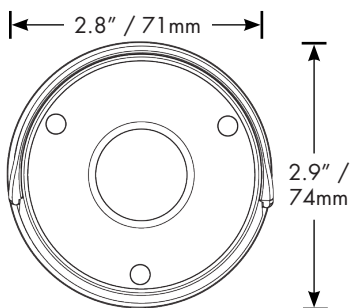
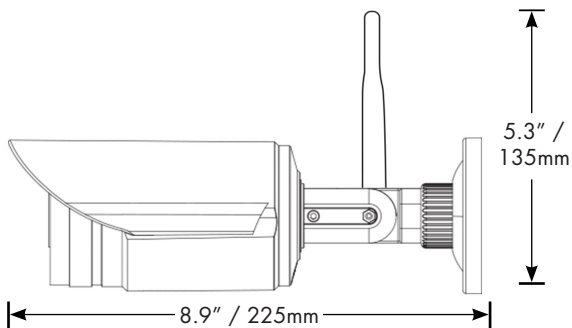
*Based on unobstructed line of sight. Actual range will vary based on surroundings.

1. Stated IR illumination range is based on ideal conditions in typical outdoor night time ambient lighting and in total darkness. Actual range and image clarity depends on installation location, viewing area and light reflection / absorption level of object.

2. Frames Per Second.

Dimensions

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Appendix B: Frequently Asked Questions

What are the differences between wired and wireless cameras?

A **wired camera** has a video cable that transmits the video signal from the camera to a recording or viewing device.

A **wireless camera** does not use a video cable. Instead, it wirelessly transmits the video signal to a wireless receiver that is connected to your recording or viewing device. Although the typical digital wireless camera is priced slightly higher than a wired camera, wireless cameras can provide cost savings compared to standard wired setups. For example, wireless cameras do not require cabling to be run between the camera and the viewing / recording device, which reduces installation time and cost.

Does a wireless camera require power?

Yes. Wireless cameras require two power sources: one connected to the camera, and the other to the receiver.

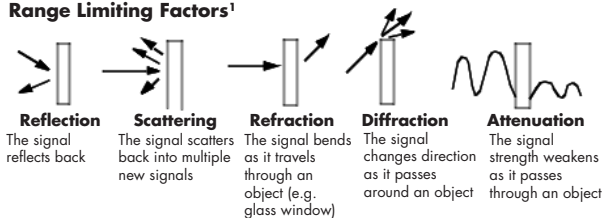
How far can a wireless camera transmit a video signal?

In an open field (with line of sight), a typical wireless camera has a range between 250 to 500ft. In a closed environment—such as an interior of a house—the wireless camera range is between 100 to 165ft. The signal range varies depending on the type of building materials and/or objects the wireless signal must pass through.

Cubical walls, drywall, glass, and windows generally do not degrade wireless signal strength. Brick, concrete floors, and walls degrade signal strength. Trees that are in the line of sight of the wireless camera and receiver may impact signal strength.

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.

Range Limiting Factors¹

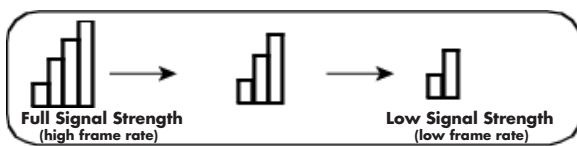


Signal strength decreases as it passes through different types of material. Try to position your wireless camera and receiver in a location where the signal does not pass through metal or concrete blocks, which can significantly reduce signal strength (as shown in the table below).

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.



Are digital wireless camera signals secure?

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.

How many wireless cameras can I install?

It is recommended to install a maximum of 4 wireless cameras per system (4 receivers and 4 cameras). Minimum space between receivers should be 2ft / 0.6m and minimum space between cameras should be 6.5ft / 2m to minimize potential signal strength degradation.

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

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).

For details on supported resolutions and frame rates for this model, s See "Appendix A: Technical Specifications" on page 12.

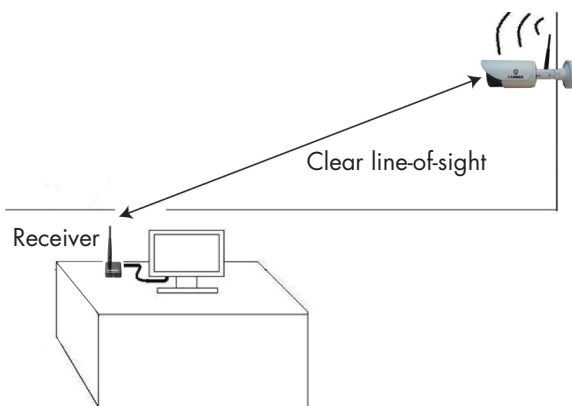
Appendix C: Extending Wireless Signal Range

DISCLAIMER: Certain accessories are not available in all markets.

There are several ways to boost your wireless signal as well as options to help you extend the range of the wireless signal.

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.



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.

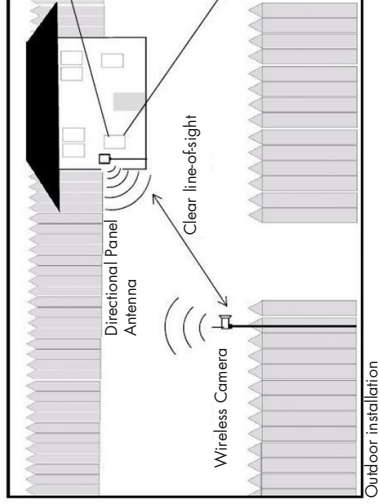
Extending Your Wireless Signal

Even with a clear line-of-sight between your camera(s) and your receiver, you may experience a lower video frame rate simply due to the distance between your wireless devices.

Accessory antennas are available that can help extend the range of your wireless signal.

2.4 GHz Directional Wireless Panel Antenna

Use the 2.4GHz Directional Wireless Panel Antenna (model #: **ACCANTD9**) to focus a wireless signal onto the camera in order to increase range of transmission (clear line-of-sight between the camera and the antenna is required). A 20ft extension cable is included help with proper position of the antenna.



Visit www.lorextech.com for more details on wireless antennas and accessories.

Appendix D: Troubleshooting

Problem	Solution
There is no picture from the camera(s).	<ul style="list-style-type: none">• Make sure that the camera is plugged into a power outlet and that the power adapter is plugged in properly.• Move the camera closer to the receiver.
The picture is dropping.	<ul style="list-style-type: none">• Move the camera closer to the receiver.• Try repositioning the camera, receiver, or both to improve the reception.
The picture is or has become choppy.	<ul style="list-style-type: none">• The picture may become choppy when experiencing a lower frame rate (e.g. 6 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.• Try switching to QVGA mode by pressing the RESOLUTION button on the receiver. Resolution will be reduced, but video frame rate will increase.
There is no audio from the camera.	<ul style="list-style-type: none">• Make sure the RCA audio output cable is connected to your DVR or television audio input.• Make sure audio recording is enabled on your DVR. See your DVR manual for further instruction.
The picture is white.	<ul style="list-style-type: none">• "Washout" or "white wash" can occur when a strong light source is pointed at the camera lens. The camera lens is not harmed during a white wash.• Do not point your camera towards a bright light source.
The picture appears fuzzy.	<ul style="list-style-type: none">• When viewing on a large-screen TV or monitor (especially high-definition televisions), the picture might seem fuzzy as the camera is limited to VGA resolution (640x480 pixels), while the TV or monitor supports a much higher resolution.• For best performance, use with TV PIP (Picture in Picture) function. Check your TV product manual to see if this feature is available on your TV.
The picture is pixelated.	<ul style="list-style-type: none">• You may be in QVGA mode. Try switching to VGA mode by pressing the RESOLUTION button on the receiver.

Need Help?

Product Support is available 24/7 including product information, user manuals, quick start up guides and FAQ's at www.lorexttechnology.com/support.

CLEANING

Clean the monitor and camera with a slightly damp cloth or an anti-static cloth. Never use cleaning agents or abrasive solvents.

- Do not clean any part of the product with cleaners with thinners or other solvents and chemicals. This may cause permanent damage to the product, which is not covered by the Warranty. When necessary, clean it with a damp cloth.
- Keep your camera and monitor away from hot, humid areas or strong sunlight, and do not get it wet.
- Every effort has been made to ensure high standards of reliability for your baby monitor. However, if something does go wrong, please do not try to repair it yourself. Contact Customer Service for assistance.

DISPOSAL OF THE DEVICE

At the end of the product lifecycle, you should not dispose of this product with normal household waste, but take the product to a collection point for the recycling of electrical and electronic equipment. The symbol on the product, user's guide, and/or box indicates this.



Some of the product materials can be re-used if you take them to a recycling point. By reusing some parts or raw materials from used products you make an important contribution to the protection of the environment.

Please contact your local authorities in case you need more information on the collection points in your area. Dispose of the battery pack in an environmentally-friendly manner according to your local regulations.

NOTICES

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

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

CAUTION: To maintain compliance with the FCC's RF exposure guidelines, place the camera at least 20cm (7.87in) from nearby persons.

CANADA/IC 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 interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.