

## Important Facts About Digital Wireless Cameras

## Wired VS 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 450 feet. In a closed environment---such as an interior of a house---the wireless camera range is between 100 to 150 feet. 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<sup>1</sup>. 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, routers may affect signal strength.



<sup>1</sup>Source: Xirrus (2010). "Wi-Fi Range Dynamics". Retrieved online at http://xirrus.gcsmarket.com/pdfs/Xirrus\_Wi-Fi\_Range.pdf



#### Improving wireless camera range

Lorex offers accessory antennas that overcome barriers and objects. Antennas also improve signal range and strength.

For details, click the blue link below:

- Wireless range extender Antenna 2.4 GHz **Omni-Directional** (model no. ACCANT08)
- Wireless range extender Antenna 2.4 GHz Directional Wireless Panel (model no. ACCANTD9)

#### **Signal Reduction Through Materials**

Signal strength decreases as it passes through different types of material. Try to position your wireless camera and receiver in a location that 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%             |

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 encryption method called FHSS – Frequency Hopping Spread Spectrum. This type of signal is highly resistant to deliberate jamming as it generates a channel hopping sequence using an algorithm generated by the receiver, which only the camera can follow through the "pairing" function.

FHSS makes digital wireless signals secure, private, and interference free.



# 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). Actual frame rate depends mainly on signal strength (see the chart above) and resolution. Most digital wireless cameras have two resolutions: QVGA, and VGA.

- **QVGA** is the lower resolution and produces video at up to 30 FPS at 320x240 resolution.
- **VGA** is the higher resolution and produces video at up to 10-12 FPS at 640x480 resolution.

In real-life applications, VGA resolution is preferred. In VGA resolution, frame rates range between 10-12 FPS. For reference, 7 FPS is valid for court evidence in North America. Although VGA offers lower frame rates, it offers crisp picture quality.

## How many wireless cameras can I install in a system?

You can install a maximum of 4 (four) wireless cameras per system when each camera is "paired" to a different receiver (total of 4 receivers).

**NOTE:** Each receiver can support up to 4 cameras. it is not recommended to use more than 4 pairs (in simple terms, 8 antennas) in an installation environment.



#### Optimal installation conditions

To receive the strongest signal strength as possible, separate the wireless receivers at least **3ft.** apart from eachother.

#### Example

