



Overview

The Buckeye Cam X80 Series includes wireless cameras, sensors, repeaters, and actuators. All of the available devices work seamlessly together and may be controlled and monitored with the X-Series Network Manager software application.

The X80 Echo combines a passive infrared motion detector (PIR) and an RF repeater in a single device. When added to an X80 wireless network, it can be used for any of the following functions:

- Extending the transmission range of wireless cameras
- Extending the motion detection range of wireless cameras
- Triggering multiple wireless cameras from one motion sensor
- Triggering a single wireless camera from multiple motion sensors
- Sending a wireless alert when motion is detected at gates, driveways, etc.
- Interfacing with other sensor types (i.e. magnetometer, seismic, pressure pad, etc.)

For sales information and product user manuals please visit www.buckeyecam.com.

Application Example: Extending the motion detection range of wireless cameras

In the example image shown below, one X80 camera was used to monitor unauthorized vehicle activity on an access road leading to a pond. Several X80 Echos were placed along the road. The X80 camera was placed about 400 hundred feet away and each Echo was configured to trigger the camera.

This type of set-up provides two advantages: 1. A single camera can monitor a large field-of-view. 2. The small size of the Echos makes them easy to conceal. The camera can be far removed from the area of activity, making it less likely to be discovered.

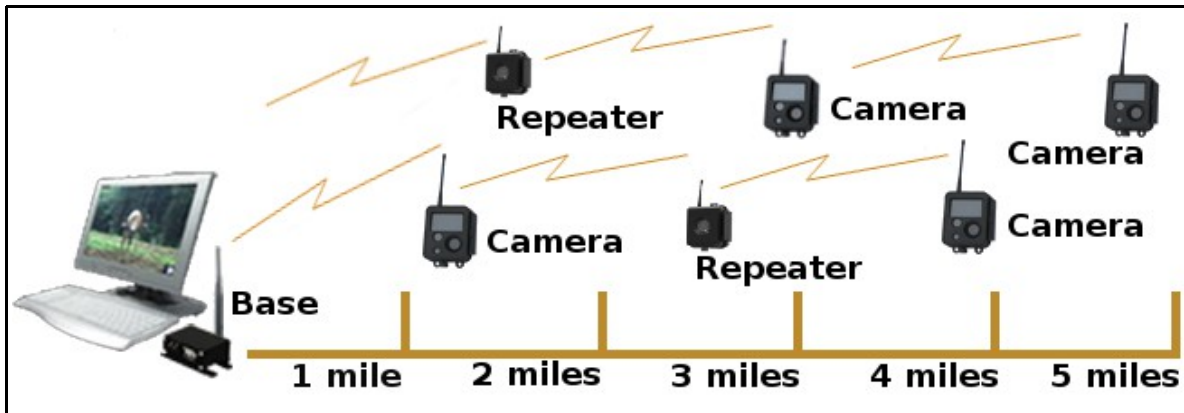
Note: When X80 cameras are set up to be triggered from an Echo, the motion sensor that is on the camera will still function unless it is disabled by the user.



Application Example: Extending the transmission range of wireless cameras

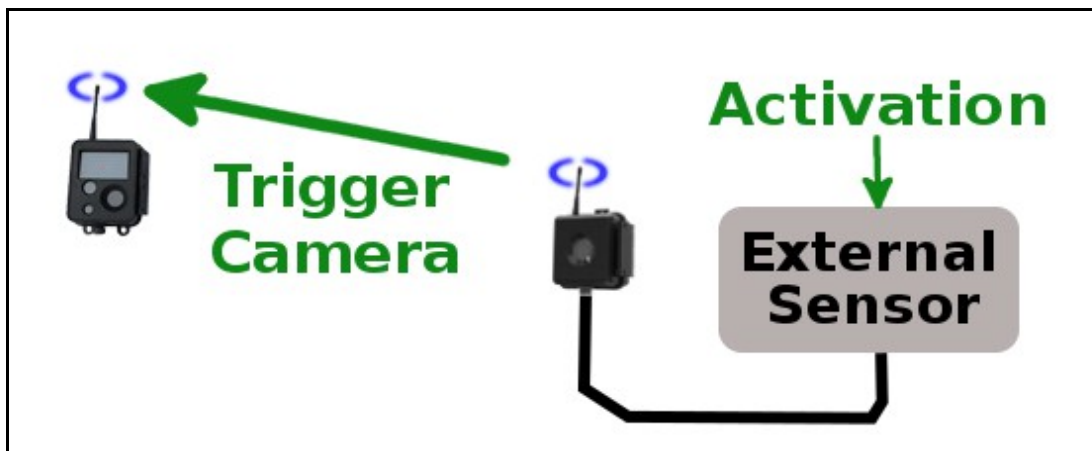
One method to increase transmission distance is to use repeaters. Wireless cameras (and all X80 wireless devices) can act as repeaters, but the X80 Echo provides a lower cost option. See *Application Note 01: Optional Antenna Setups for All Buckeye Cam Wireless Devices* for more information on repeater setups.

www.buckeyecam.com/site/assets/apnote01_antenna_setup.pdf



Application Example: Interfacing with other sensor types

Any sensor that provides a contact closure type output may be connected to the X80 Echo auxiliary input. Using this feature, most magnetometer, seismic and pressure pad sensors can be added to the X80 wireless network and may be configured to trigger X80 cameras. **Note:** This feature requires an Auxiliary Sensor Cable. See the *X80 Echo User's Manual* for more details.



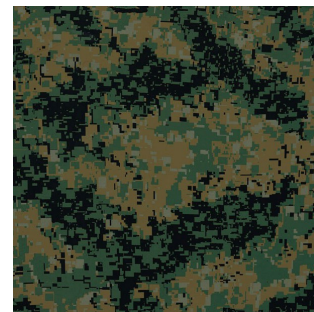
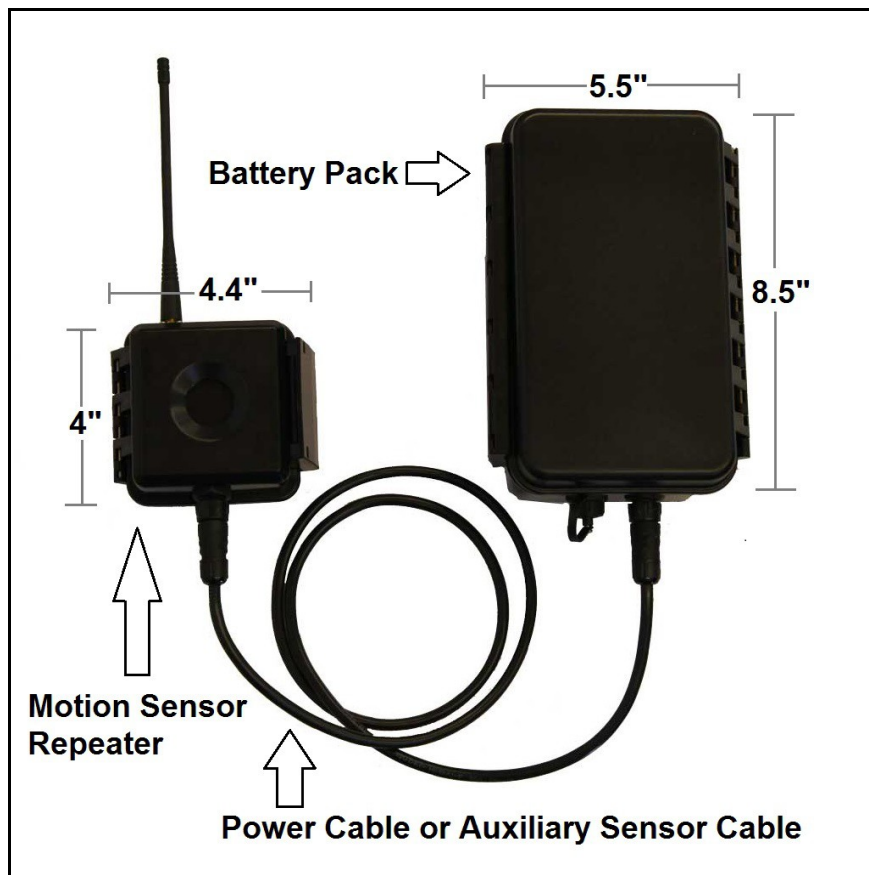
Specifications¹

The *X80 Echo* and battery pack are housed in watertight, weatherproof enclosures for reliable outdoor operation. The standard color is matte black. Optional camo finishes are available in both woodland and desert patterns.

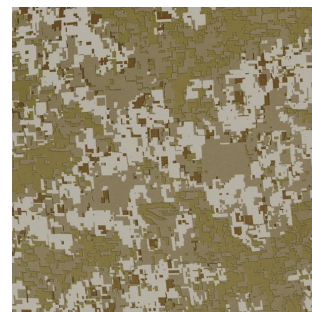
A bracket and spring buckle strap attach to the back of the enclosures to allow for easy mounting. The 12V SLA battery pack (if used) may be placed on the ground. This typically makes it easier to conceal in weeds or bushes.

There are two battery power options available :

1. For applications that do not use the repeater function, the sensor may be powered with five internal AA batteries. The external battery pack is not required.
2. For applications that use the repeater function, the external 12V SLA battery pack must be used in addition to the internal AA batteries.



Optional woodland pattern



Optional desert pattern



Performance Features	
Functions	Motion Sensor, RF Repeater, Auxiliary Sensor Interface
Auxiliary Input	Connect to battery (-) to activate. Max. current = 10mA
Compatibility	All X80 Wireless Devices, X-Series Network Manager
Operating Temperature	-40 to 140 F
Motion Detection	
Type	Passive Infrared (PIR)
Range ²	User adjustable. Up to 100 feet
Angle	Approximately 10 degrees
Reaction Time ³	0.1 Seconds
Delay between activations	User selectable. 1 second to 2 hours.
Data transmitted with each activation	Date, Time, custom text field
Wireless Network	
Maximum number of network devices	254 (total of all device types)
Line-of-sight transmission Range ⁴	Up to 2 miles with standard antennas
Maximum allowable antenna gain	15.1 dBi (including cable losses)
Transmission type	902 to 928 MHz frequency band, FHSS
Transmitter Output Power	Up to 250 mW
Agency Approvals	
FCC (USA)	MCQ-XB900HP
IC (Canada)	1846A-XB900HP
C-Tick (Australia)	Yes
Anatel (Brazil)	Pending
Power Requirements	
Internal Battery ⁵	5 internal AA. For best performance use Lithium type.
External Battery (Optional) ⁵	External 12V SLA UB1270, required for repeater function
Supply Current (Typical) ⁶	0.7 mA when in low power sleep mode (i.e. no activity) 40 mA when transmitting 14 mA during 20 second idle state after every transmission
Solar Panel	Optional solar panels sold separately
Dimensions	
X80 Wireless Motion Sensor Repeater	4L x 4.4W x 2.75D (Dimensions are in inches)
External Battery Pack	8.5L x 5.5W x 3.75D (Dimensions are in inches)

¹ Specifications are subject to change and may not be available in all firmware or software versions.

² Motion detector range may be affected by mounting angle and ambient temperature.

³ Reaction time specification is for motion detection only. It does not include transmission delays.

⁴ Transmission range will depend on the type of antennas that are used and the surrounding terrain.

⁵ Batteries are sold separately

⁶ Average supply current will vary depending on level of activity, signal strength, etc..

For more information visit, www.buckeyecam.com or call toll free at : 866-325-8172.