Things to consider when purchasing a Wireless "Barn Camera System"

Livestock breeders, producers, ranchers and farmers have a significant investment in their livestock. If an animal is sick or pregnant and about to give birth, a producer must constantly monitor the progress of the animal by repetitively visiting a barn or animal pen. Tedious and exhausting, this process can lead to many sleepless nights or missed opportunities for the producer.

Problem

A video camera installed in a barn or pen could be used to provide the additional information needed to make livestock management decisions. Trenching or cabling wire from the barn/pen to the house is not always convenient, economical or possible in this type of application. Sometimes multiple monitoring cameras are required, or camera locations need to be periodically relocated from one barn/pen to the next.

Solution

Install an all-weather wireless transmitter and receiver system, to send wireless video and audio from the barn/pen to the house. From the convenience of the home, the producer can make spot evaluations of the animals by watching LIVE video and audio coming from the barn/pen, and minimizing the frequency of physical visits. Used correctly, wireless cameras can provide an additional level of safety, security and information for the producer to use when making critical decisions.

Easy to install, the all-weather 2.4GHz or 5.8GHz wireless video transmitter and receiver systems are ready to operate, right out of the box. Simply connect a power supply, video cable, choose a channel, aim and shoot.

With systems ranging from 500 feet up to 4 miles, these systems are the best choice for short to long range wireless applications.

Suggestions:

· Consider the lighting conditions when choosing a camera for this application. Insufficient light conditions results in poor video image. Adding additional lighting may not necessarily be relaxing for a stressed animal.

· Choose video cameras with lower light (lux rating) requirements, or consider infrared illumination.

· If calving in an outdoor or remotely located pen, consider the power supply options for the video equipment.

· Use all-weather cameras for all indoor and outdoor applications. Weather, dust and dirt are elements that can reduce a cameras life if they are not weatherproofed.

· Use a camera that has audio capability, or add it separately. Now you can also hear an animal if stressing or in labor.

· At the house, use a video modulator to add the video/audio from the barn camera to all the televisions in the home.

· If using multiple cameras in a barn, cable all the cameras to a quad or multiplexer first. The output of the multiplexer can then be cabled to the input of the video transmitter outside of the barn, and then transmitted over to the house. The benefit to this scenario is that only one wireless video link is required and not one for every camera (less expense).

Installation Tips & Tricks

There are four critical variables that you must consider in a site survey before permanently installing wireless video equipment.

Identify Line-of-Sight

Depending on the height of the building, tower or structure, you must consider the path that the wireless video will travel between the transmitter and the receiver. Line-of-sight is defined as a clear and unobstructed view between the transmitter and the receiver.

· If you are trying to transmit through trees then you will need to seriously consider how much range will be lost. Performing a field test is the best way to ensure proper line-of sight and signal strength. Ideally, the field test should be performed when plant foliage is in full bloom. If you're installing in the winter, the leaves that come out in spring may eliminate your RF link.

· Watch out for unusual traffic in your transmission path. For example, a bailing machine, a trailer loading grain, or other heavy machinery and equipment can be much taller than expected. Tractor-trailers or other large farm equipment may be a factor if trying to transmit across the yard or across a field. The higher a transmitter and receiver are installed in the air, the higher the success rate.

· Metal between the antennas cannot be ignored including electrical transmission lines that may not be obvious. Each high voltage wire crossing your path can be the equivalent of transmitting past an eight-foot thick steel pipe. Microwave towers may look fragile, but they can be as good as or equal to a solid steel door for blocking transmission.

Determining Range

Ask five different people how far it is from one barn to another and you will usually get five completely different answers. The point here is that you need to be sure. VideoComm Technologies manufactures various systems for different distance requirements. Rule of thumb to use when determining range, double check and over estimate the maximum distance required.

Interference

We strongly recommend that you always conduct a temporary setup of any wireless equipment before systems are permanently mounted. As we are sharing a radio frequency that is considered part of the public band, we do not have any entitlement to that frequency and must accept interference if it exists.

Some examples of Radio Interference sources.

· Other 2.4GHz video transmitters in your area.

· 2.4GHz wireless data network, LAN or WAN.

· Proximity to some consumer products may or may not be a source of interference. Examples include cordless phones, consumer data transceivers for wireless Internet or microwave ovens.

Other sources of interference that are not related to wireless.

· Improper line-of-sight, installation or alignment of transmitters and receivers.

· Power source ground loops.

· Incorrect voltages to devices (too high or too low), including transmitters and receivers.

· Sharing power supplies between devices.

· Power source is too close to video cable, low impedance, coax cable kinks, poor video cable terminations, improper and/or lengthy power source cabling.

· Corresponding units are on different channels.

Some possible solutions if experiencing interference.

· Change the channel of your transmitter or move your wireless video devices farther away from the source of interference. Transmitters do not have to be beside the camera source and receivers do not have to be beside the receivers.

· Before connecting the video feed into the transmitter, use a field monitor to check that you have a good video picture. Similarly for the receiver, check the video output first before connecting to the video feed to the monitor or recorder.

· Depending on installation, use an existing building as a shield from interfering source.

· Check power sources and video cable runs for ground loops, correct voltages, cable kinks, impedance and proper termination. Ensure proper gauge of wire/cable is used for lengthy video and power source installations.

· We strongly recommend using separate regulated power supplies for separate devices.

Physical Installation

You have taken all of the necessary precautions listed above and now you're ready to install your wireless equipment. Here are a few final tips to ensure your success when executing your installation.

· Mount your equipment at least 15 feet above the ground and increase the height if there are any obstructions like a rooftop, cars or equipment or a metal fence. If transmitting over a 10 foot high fence, the transmitter / receiver should be at least 25 feet above the ground (15 feet above the fence).

· Mount the transmitter and/or receiver on the edge of the roof or pole and ensure that it is looking away from the building. This is particularly important if there is a metal roof that tends to deflect signals down.

In Closing

Wireless video offers new opportunities to protect lives, properties and assets, in ways that were previously impractical. By following the techniques listed above, we hope to minimize your installation time and maximize your results.