

How Do I Choose the Security Camera System That's Right?

By: Steven C. Detro, President/CEO, 4MAX Enterprises, Inc.
EZine Articles, June 20, 2007

Whether it is one camera and a monitor to a more complex digital video surveillance system with hundreds of cameras and numerous networked digital video recorders (DVR), the security industry has met the need for high-tech video surveillance with user friendly solutions for businesses.

There is no getting around the fact that a good surveillance system can make your business safer, reduce shoplifting, deter theft, monitor cash handling and registers, increase security around premises and parking lots, record accidents to guard against fraudulent workers' compensation claims, and decrease insurance costs.

The simplest system would be a single camera connected directly to a monitor and a digital video recorder to store the video. Even though a system like this would help security in some instances, it is probably not enough for most businesses. The need for multiple cameras is typically called for in order to cover large areas.

There are hundreds of security companies out there trying to sell anything from \$40.00 camera kits to \$20,000.00 mega systems, and beyond. So before you start comparing systems or deciding on a company to buy from, you need to evaluate exactly what your needs are.

There are basically five elements you should consider when choosing the right DVR (digital video recording) device for your environment:

1. **Number of cameras needed**
2. **Frame Rate (FPS)**
3. **Archiving Days**
4. **Scalability / Integration**
5. **Price**

This is a short guide to choosing the correct system to meet your needs. It doesn't matter if you are shopping a basic residential system or a large multi-server industrial system, the elements listed above always apply and should be closely considered as part of your decision making process. Additionally, you should always research the support, warranty, payment plan and track record of the company you are dealing with.

Below is a detailed explanation of the five elements listed above in order to become more informed in choosing the best system for your needs.

Number of Cameras Needed

It is best if you take a look around your facility to determine the number and type of cameras you will need to do the job. Keep in mind that DVRs typically come in 4-, 8- and 16-port configurations. However, there is a wide variety of DVRs offered in today's market that can range from 2 ports to 64 ports.

When you consider where you need cameras it is important to remember that it is not cost effective to put cameras everywhere. It is better to place them in strategic locations where movement and activity indicate a suspected circumstance. Example: If you have an inventory room where it would take 6 cameras to cover every inch of rack space and your goal is to know who was around when things have been taken, you may want to place 1 camera on each entrance to that room instead of 6 in the room. Another example is a convenience store where you want to catch persons who are stealing gas. It can be cost prohibitive to put a camera at each pump that records license plates with enough detail to read them. Instead, you may want a remote camera looking at each gas island in general and then high resolution cameras for each exit. You may have video of the person pumping gas with limited detail, but you would also have high resolution video when they drive out that records the license number.

By taking a little time to plan your camera selection, you can accurately cover your facility with as few cameras as necessary without sacrificing results.

Frame Rate

Once you know how many cameras you will need, you will need to determine what video quality you will require for each camera. The element which most affects the recording quality is frame rate. Frame rate is referred to as FPS (frames per second) - that is the number of individual frames per second the DVR will allow for each camera. Television is roughly 30 frames per second and a snapshot would be 1 frame. The way to do this best is to consider the categories for the cameras you are installing.

3 to 10 FPS: General activity where you just need to know that someone was there and get a good description.

10 to 20 FPS: High density activity such as a hallway with lots of congested traffic, rapid movement of many persons.

20 to 30 FPS: Detailed activity where you need to not only see the person, but what they are doing with their hands or inventory etc.

Once you have decided the optimal frame rate for each camera, bearing in mind that higher frame rates add cost to the system, you can add them together to determine the overall frame rate required.

Example for a 6-camera system:

Camera 1 – Cash register	30 FPS
Camera 2 – Cooler	5 FPS
Camera 3 – Front Door Entrance	10 FPS
Camera 4 – Pump Island 1	5 FPS
Camera 5 – Pump Island 2	5 FPS
<u>Camera 6 – Front Exit Drive</u>	<u>20 FPS</u>
Total	75 FPS (overall)

Now you know that you will need a DVR which can record at 75 FPS overall to meet your needs. You would normally round up to the next available FPS configuration offered by the system you are considering, such as an 80 FPS system. It is also important to ensure the system you are considering will allow you to mix and match frame rates per camera in the software and at the user level. Not all manufacturers allow this. It is important to choose a manufacturer that has the software that will allow you to decide how to allocate your frame rates and to which cameras.

Archiving Days

This is the number of days of video recordings you will want to be able to go back and see. Most people find that 7 to 14 days is sufficient. If you feel you may need 60 days or more then you will want to be sure to specify this because it affects price. A good system is typically 7 to 14 days, but can be custom ordered to 6 months or more with up to 3.5 Terabytes (TB) of storage without having to perform any maintenance.

Remember, the amount of storage you require will affect the price so ensure that you only specify what you need. If the system is scalable then you can always add more storage capacity in the future.

Scalability/Integration

When considering the correct set-up for your current needs and future needs, you should seek a system which can be upgraded in terms of storage capacity,

camera ports, optional feature sets and which is capable of being networked with other servers should the need arise. This is important because it allows you to purchase exactly what you need today while ensuring you can expand as your needs do.

Additionally, the system you choose should be a good fit for your particular environment. For example, you need to ensure that the system is designed to work in the type of location you are proposing. You would not typically want an industrial type system in your home and you would not just install a basic residential system in a boiler room.

Price

If you take the time to research the elements above and create a specification from them, you will be able to see how each of your choices will affect pricing. Don't be afraid to back off some of the requirements to save money. You may find that you only need 30 days storage instead of 90 days or that you only need 20 FPS on any given camera.

Conclusion

The five elements above are the primary factors which affect pricing in this industry. Always plan well and you will ensure you are getting the best overall system to meet your needs at a price that is well informed and as low as possible.