PM's Guide to the Best in Home Surveillance Gear

Yes, cameras mounted around your house can catch intruders, but modern home surveillance gear is about so much more, like checking in on your home when you're away or finding out when a package arrives via smartphone alert. Our guide to home surveillance systems will help you find the right gear for keeping a sharp eye on your abode.

BY GLENN DERENE

As I'm

Home surveillance gear has gotten smarter and more connected, bringing airport-grade security to the home front.

Dan Saelinger

writing this in the Popular Mechanics offices in New York City, I'm looking out the front window of my home in Connecticut. There's no one there right now, but only a few minutes ago, I got an alert from the security camera I've got suction-cupped to the inside of the glass. In fact, every day I get an alert around 4 pm; that's generally when the mailman comes for his daily drop-off. But today, I also received a midmorning message that I didn't expect. I checked the video clip on my phone to discover that UPS had left a package on the porch.

Like many people with surveillance systems, I first got interested in the technology as a home security measure, but over time my relationship with the system has become a bit more complex. Having a constant remotely accessible video link to your front door gives you a sense of connection to what's happening at your house that goes beyond simple peace of mind. Wondering how often your dog runs out the dog door? Curious about who's leaving all the Chinese menus in your mailbox? Want to know if there's snow on your driveway when you're on vacation in the Bahamas?

Modern home surveillance cameras combine software, hardware and cloud-based services to satisfy humankind's instinctual (and occasionally obsessive) curiosity about the status of our homes.

And the software and cloud parts of the equation have gotten surprisingly sophisticated in the past few years. Since Popular Mechanics last discussed the technology, several consumer-grade cameras have come to market that integrate video analytics software once limited to governments and industry. "All the systems we're seeing now in cities and airports are starting to trickle down to the home," says James W. Davis, an expert on video surveillance technology from Ohio State University. "And it goes beyond security. There's plenty of research into using these systems to monitor and help the elderly in their homes."

When choosing a home camera surveillance system, you basically need to ask yourself two questions: How much do I want to spend, and how smart do I want my camera to be? As you might expect, the two questions are interrelated. I tested four surveillance setups ranging from $179 to $650 and found that while many of the basic technological concepts were the same, no two systems had identical features. I also found that if you want all the remote-access, cloud-based bells and whistles, you're going to get sucked into paying a monthly or yearly fee.

The Simple Setup

System: Avaak Vue

Pricing: Basic one-camera system is $179; one-camera motion-detection system is $199. Additional camera is $99 to $129 (outdoor cam is $159).

Resolution: Up to 640 x 480 pixels

Networking: Proprietary wireless

Mobile Alert: Limited alerts are free; unlimited are $20/year.

The Avaak Vue is the cheapest system of the bunch, and it is also the easiest to get up and running. The cameras are battery-operated and completely wireless. They communicate with a hub that plugs into your network router, and all video is viewed through a secure Web page. Even mounting the Vue cameras is easy: They have an ingenious peel-and-stick base that the cameras attach to magnetically. The downside is that Vue cameras are pretty low-resolution and aren't really that smart. There are two systems available: The basic CI system can be programmed to record at certain times of day, but the cameras don't "pay attention" to the video at all. The slightly more expensive CM cameras can detect motion and send alerts via e-mail or SMS. But if your camera is aimed at a relatively high-traffic area (say, the street in front of your home), you have to dial down the sensitivity of the motion sensor in the software. Other systems are more sophisticated, but none approach the Vue for idiot-proof setup. Remote viewing from a computer is free, along with a limited number of motion alerts, but access from smartphones and unlimited alerts require a $20-per-year plan.

Polished Package

System: Logitech Alert

Pricing: One-camera indoor system is $300; one-camera outdoor system is $350 (additional cameras range from $230 to $280).

Resolution: 960 x 720 pixels

Networking: Power line

Mobile Alert: Remote viewing is free; alerts are $80/year.

Somewhere in the middle of the continuum between ease of use and sophistication is the Logitech Alert system. It uses your home's power lines both for power and to connect to your network (a plug-in receiver needs to be placed in an outlet near your router to transmit the signal from your home wiring). Unlike the Web-based Vue system, the Alert uses software on your home computer that can be complemented with a range of Web services. The Alert's software is definitely the most polished of the bunch. And its 720p video signal is the crispest as well. The software allows some limited programming of the cameras, such as drawing boxes around trigger areas or sections of the video frame to ignore. For example, you can draw a "pay attention" box around the area right in front of your door but tell the system to ignore the street behind it—that provides a far more accurate record of who comes up to your house, rather than just who passes by it. The downside is that Logitech hides much of the best functionality (e-mail and text alerts, smartphone control) behind a paywall of $80 per year. That's a bit disconcerting after you've already shelled out $300 to $350 for the system.

Camera With Brains

System: Cernium Archerfish

Pricing: Solo indoor/outdoor cameras cost $399 each; Quattro four-camera setup costs $1399.

Resolution: 640 x 480 pixels

Networking: Wi-Fi

Mobile Alert: Remote viewing is free; analytics and alerts start at $6/month.

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The most sophisticated camera analytics comes from a company called Cernium, which got its start selling more advanced stuff to airports. Cernium's Archerfish Solo system has much of the same "regioning" functionality as Logitech's cameras, but Solo can also perform image analysis to tell the difference between a person and a nonperson or distinguish a vehicle from other objects. That reduces the number of garbage alerts and lets you zoom through a day's footage in moments. Unlike other cameras, the Solo requires no separate base station—it communicates directly with Archerfish's cloud-based service using either your Wi-Fi network or a direct Ethernet connection (as with other systems, the free basic service lets you check in remotely, while access to the more sophisticated functions requires a monthly fee). The Solo sent fewer false alerts than the Logitech camera, but it was the most frustrating to set up. Getting the software to recognize the camera took forever, despite the camera's indicator light signaling that it was connected and functioning. Also, my testing showed that although the camera is impressive in its detection abilities, there are still enough false positives (it thought my son's teddy bear was a person) to make one question the analytics.

The Integrated Solution

System: Schlage Link

Pricing: Camera is part of a $644 system that includes Schlage digital locking system and one lighting controller. Additional cameras are $169.

Resolution: 640 x 480 pixels

Networking: Proprietary wireless

Mobile Alert: Alerts from lock (not camera) are $9/month.

Finally, I tried the Schlage Link system, which is a bit of an outlier here, as it is not a pure camera solution. In fact, the Schlage camera is an accessory in the larger Link system—you can buy it individually or as part of a home security and automation package that also handles locking, lighting and thermostats. As it turns out, the Link camera is the least "intelligent" in this lineup, yet the overall system is the most sophisticated. The Schlage Link system is ostensibly a DIY package, but because it is centered around the company's digitally controlled door locks, if you are at all uncomfortable with the process of lock installation, you may want to call a locksmith. (The Link locks fit into a standard lock bore.)

The camera allows remote monitoring via a Web page or smartphone app (as with other providers, there's a fee for cloud services), but it has no event detection or analytics. The Link lock, however, can record, and alert its owner when anyone enters the house. This gets pretty interesting: You can give your kids a separate code to punch into the lock's keypad and the system will alert you when they get home. If you're having work done on your house, you can give the contractor a separate key code that only works during a prescribed time of day. And you can use the remote access to turn on the lights and open the door from a computer or smartphone and let people inside while you're away. In this scenario, the camera acts as a remote verification system—playing backup surveillance for the lock. If someone is at your door, you're able to see who it is before letting him or her inside.

For some, computer-accessible locking might just be a bit too creepy. (What about hackers?) But it's worth remembering that many people already use a remote control to open their garage doors, and that for every hacker who can crack a computer code, there are probably thousands of thieves who can pick a standard door lock.

So after several weeks of testing various systems, no one attempted to break into my home—then again, nobody had attempted a break-in before, either. The lesson I've learned from my surveillance experiment is that when I'm away, my house is actually quite a boring place—which, I suppose, is exactly as it should be.