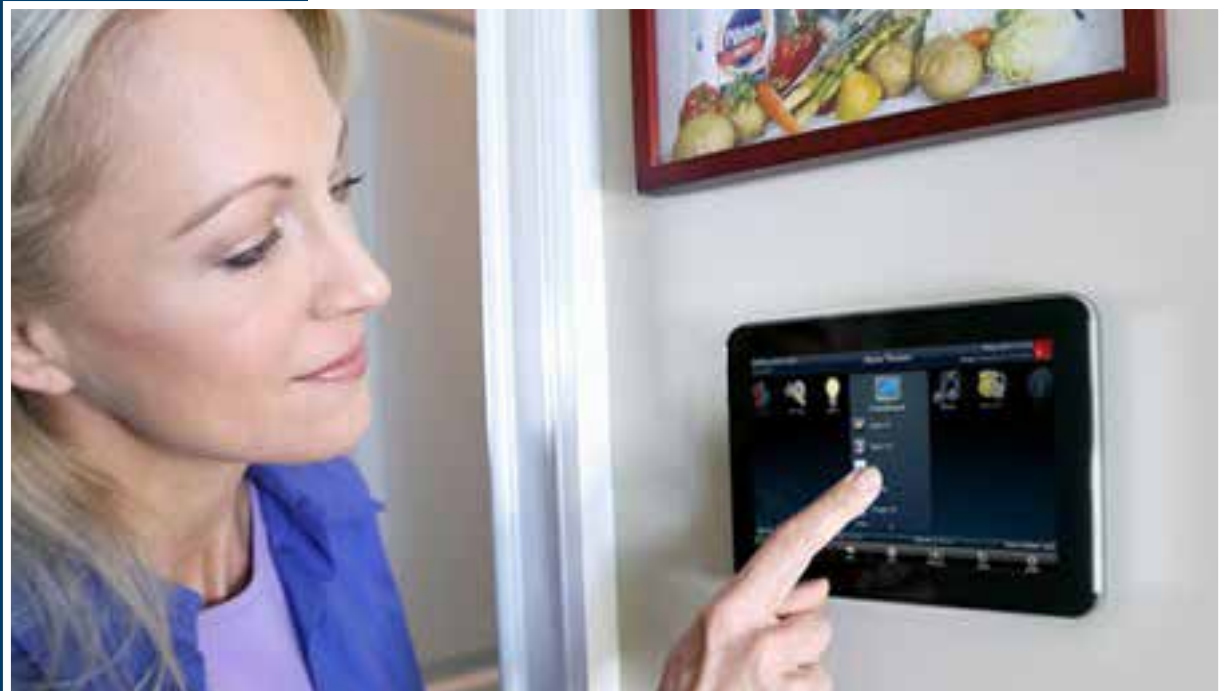


guides

**electronic  
HOUSE**  
FOCUS SERIES

# GETTING STARTED IN HOME AUTOMATION

Understand the trends and  
technology to make your smart  
home project a success



# Introduction to **HOME AUTOMATION** AND **SMART HOME TECHNOLOGY**

The basics behind the technology that can give your home the smarts to operate at its most efficient.

**ALTHOUGH AUTOMATION IS EMERGING** as the next must-have technology for the home, you may hear it also referred to as home monitoring, home control, smart home, or connected home. Home automation can be used in a limited capacity in single spaces, or throughout the entire residence, including outdoors. Today, there are very few limitations as to what can be controlled or monitored using this technology.

Some of the most popular examples of home automation include:

- ◆ Devices that control lights, shades, thermostats, audio, video (one or more TVs, a dedicated home theater, etc.), pools/hot tubs, security systems and more.
- ◆ Smartphone or tablet-based apps that let you turn lights off and on, adjust thermostats and monitor the security of your home remotely.
- ◆ Complete integration that unifies nearly every electronic subsystem in your home so that they all can be controlled via dedicated touchpanels, keypads, handheld remotes, smartphones and tablets.



## Why Automate?

Regardless of make or model, home automation systems are designed to provide these four core benefits: comfort, convenience, efficiency and peace of mind. These advantages are often realized only after you have lived with an automation system for a while, when you have been able to fully experience the impact it can have on your everyday routines and lifestyle. After the novelty and luxury of owning a new home automation system wears off, these benefits are what you'll mention first when friends and family ask why you decided to put a system into your house.

Let's take a look at each factor:

- ◆ **Efficiency.** The fact is, switching off and on lights, locking doors, adjusting thermostats and tweaking other electronic devices takes time, especially in a large house. An automation system can consolidate every touch it takes to prepare your house for your arrival, departure and other occasions into a single command.
- ◆ **Convenience.** Who wants to get up from the couch to close the shades and dim the lights when you can do it from a remote control or iPad app? Convenience is king in an automated house where lights, door locks, thermostats and other devices can be adjusted with just a touch of a button.
- ◆ **Comfort.** Through its ability to actively monitor every system in your house, an automation system ensures maximum comfort with minimum effort.
- ◆ **Peace of Mind.** A home automation system helps prevent potentially bad things from happening by enabling you to monitor parts of your house conveniently from touchpanels, remote controls, tablets and smartphones—and turn things off, close things up and make adjustments if necessary.

### Which control system is best for you?

There's a wide variety of solutions available, from simple one-room, do-it-yourself products that can be purchased via a big-box retailer to professionally-installed systems intended to automate an entire residence. Here are the four main providers of automation systems, along with some of the pros and cons of each:

- ◆ **Retail** (online, stores and other sources)

Most automation systems sold through retail channels are designed to be installed by do-it-yourselfers. They are usually wireless, which simplifies the installation process, and are affordable. On the flip side, installing a home automation system yourself may not be as easy as you think. Although you may need to fish a minimal (or none) amount of wire, you may need to update the wireless network in your house so that the automation system works reliably.

- ◆ **Mass Market Service Providers**

You're already paying for cable, phone and Internet service; why not bundle an automation system into your monthly bill? Mass market service providers offer a convenient way to buy an automation system, but know that the capabilities of these systems are fairly basic.

- ◆ **Security Dealers**

From the same companies that have for years been selling security systems to residential clients you can now buy a complete automation system. Systems from this channel provide home protection with basic automation of lights and thermostats.

- ◆ **Custom Electronic (CE) Professionals**

No one knows home automation better than a CE pro. They typically sell higher-end systems that have the capacity to automate just about anything you can think of—lights, A/V equipment, thermostats, motorized window shades, swimming pool pumps, the works. They are highly customizable and can be tweaked to provide additional features.



## The Power of a Good Plan

If you are building a new home and would like to incorporate home automation, plan for it early in the construction phase. It is always less expensive to install an automation system while a home is being built than to wait until it is finished. You'll be able to blend the technology into the architecture and style of the house in a way that's functional and attractive. For example, by working automation into the construction plans, touchpanels can be easily flush mounted into walls and speakers can be tucked into ceilings. Plus, it'll be a cinch for a CE pro to install essential cabling to every possible location—even places where you can't imagine needing a TV, a keypad or a speaker. By having the wire in place, you'll be able to add devices to the home automation system should you change your mind and put a flat-panel TV in the garage, for example.

## Wired or Wireless?

A popular option in home automation is “wireless.” Many homeowners balk at the idea of having new wires run throughout an existing home, so wireless systems look appealing. Some automation systems may require running power to places where you can't run a wire. In those cases look for products that can operate for a long time on batteries such as remote-controlled lights and motorized shades. Wireless technologies are becoming more prevalent in today's home automation systems, and offer a great deal of functionality. However, if you are starting your project while your home (or room) is being constructed, then wired systems will continue to be the optimal solution in the long term.

## Will an Automation System Affect the Style and Aesthetics of My Home?

While home automation systems utilize sophisticated technologies, most people don't want them to be the stand-out feature in a room. We don't generally want the home technology to overwhelm the home's aesthetic. Automation systems require an interface—the device from which the user interacts with the subsystems managed by the automation processor. Think of a light switch as a basic interface for your room's lights. With a more comprehensive automation system designed to integrate several subsystems (lighting, audio, video, windows, security etc.), it's important for the control interface(s) to be simple to use. Common interfaces include tabletop remotes, in-wall keypads, LCD touchscreens plus smartphones and tablets.

What works best for each application will depend on the number of systems being controlled and your individual preferences. Ideally you should have more than one way to control a system. For example, in addition to a smartphone app to control your lights, you should also have an in-wall keypad.

Overall, the effect on aesthetics should be minimal. Today's systems, with their variety of available control interfaces, have become increasingly discreet. In many cases, there is no effect at all, since an existing device you already carry around with you like a smartphone or tablet can manage your system. In addition, wall-based panels and switches generally are available to match any décor and often do not take up any more space than a traditional light switch would. It's also common for professional home automation providers to work closely with interior designers and architects to coordinate the style of your living space with any controls that may be required.

## How Expensive Is Home Automation?

Home automation was once thought of as something only for the wealthy few, but today there are options to fit nearly any homeowner's budget. Some basic products, such as a wirelessly controlled dimmer and remote control, can give you a taste of home automation for under \$100. Smaller multi-room systems can start at \$500 and go up to \$5,000 or much more. Advanced systems for estate-size houses can reach well into six figures. Cost all depends on the size of the project, the number of systems you want to control and the level of ease of use and reliability your project requires.

The cost of a professional installation hinges on a number of factors. First there's the cost of the equipment itself which may include master controllers, matrix switchers, and separate modules for specific applications (such as amplifiers for audio distribution), plus the control interfaces for each room. In addition to that, you will need to factor labor costs for professional design, wiring, installation and programming.

## Where Do You Start?

Now that you're interested and thinking about the possibilities, where do you begin? Visiting or talking to a local CE pro is a great start. From a CE pro you can learn more about the specific systems available and discuss what might be possible to achieve given your specific budget.

Think about the tasks you do around your house every day—managing your lights and thermostats, enjoying music and video, keeping track of your family, entertaining indoors and out—and imagine which tasks might be made more efficient with the help of a home automation system. Also think about how you would like to connect to the system—are you a smartphone or tablet junkie, or would you prefer to use an in-wall keypad or touchpanel that's in the same place every time you need it?

Keep in mind that having a home automation system can be a little addictive. Once you get used to having it, you may wonder how you lived without it. Most people who begin with basic functionality end up expanding into more rooms or more functions, and that's the beauty of home automation. It's there to make your life easier.

# BIGGEST TRENDS in Home Automation

Systems are getting increasingly more affordable, easier to install and simpler to use.

## DIY Automation

**FOR DECADES**, DIY automation has been a niche within a niche, but it's finally reaching into the mainstream.

Naturally, inexpensive DIY systems don't offer the nearly limitless functionality and customization of really advanced systems, but so far, they're very good for what they are—easy ways to control your lights, thermostats, (basic) security, etc. with a single app.



## Appliances

Because we're inherently lazy as a culture, not to mention time-stressed, the idea of automated kitchen appliances has had a certain allure since Captain Kirk first ordered the Enterprise food synthesizer to make him a cheese sandwich.

Big name companies have been beefing up their efforts to develop and bring to market smart appliances, like a refrigerator that will respond to a text message asking if there's any beer left or a stove that notifies you when the roast is ready. Similar ideas have been floating around for years, and they may start to appear in more products soon.



## Security for the Paranoid

Yes, we live in a perpetual state of fear that something in our homes will malfunction. It's this fear that is driving a lot of new home automation products. Water sensors, leak detectors, smoke alarms... all with instant text messaging and hand-wringing included. Security is the main driver behind the systems offered by telecoms like Verizon, Xfinity and AT&T and retail systems like Lowe's Iris and Staple's Connect. These systems



emphasize IP cameras, leak detectors and contact sensors. The fact that this technology is fairly inexpensive (a few hundred dollars will cover most homes) and easy to set up is also spurring the adoption.

### Crowdfunding

Throughout the past 12 months, crowdfunding requests for home automation products were numerous. What makes this notable is that there has been more innovation stirring up the home automation market in the last year than there has been in the last several years. Sure, many of these products will never actually surface—and many of the ones that do won't have any great impact on the home automation industry. However, a few of them will, and those few will keep pushing the creativity envelope as well as spread awareness of the possibilities of automation as a whole. Good for everyone.



### Smart Door Locks

Locks? Yes, locks appear to be nearly as big a deal as, well, thermostats (and who saw that coming?). The rise in smart locks, controlled by various wireless means including Z-Wave, Zigbee, Wi-Fi and Bluetooth, provides convenience and security without adding a lot of cost. Smart locks are only a couple hundred dollars, and are often the gateway to a family adopting more automation systems in the future. It wouldn't be shocking to see major home builders (especially luxury home builders) adopting these in a big way.

### Internet of Things

The Internet of Things or IOT is just a way of saying that devices in the home are connected via the Internet. Some of these products connect directly to each other (or through your home's Internet router), or they connect to the cloud (some corporate server somewhere) and back to your home. The benefit of IOT devices in the home is that they allow you to control and connect with your home systems from anywhere inside or outside of the house. IOT is what drives the magic of checking your iPhone to see who's ringing your front doorbell or turning on your heat/AC before you arrive home from a trip.

Two things are making IOT-based automation take off. The first is that broadband Internet and mobile broadband are pretty ubiquitous among American consumers. If you have a smartphone with a data plan, you're half way there. The other important part is that the radios to connect devices, whether they be Wi-Fi, Z-Wave, Zigbee, 6LoPAN or something else, are all getting cheaper and smaller. IOT also welcomes new companies to the market. These are the ones that can write the software to integrate devices that already exist. More products mean more choice for consumers—and that's always a good thing.

# TOP 10 AUTOMATION FEATURES

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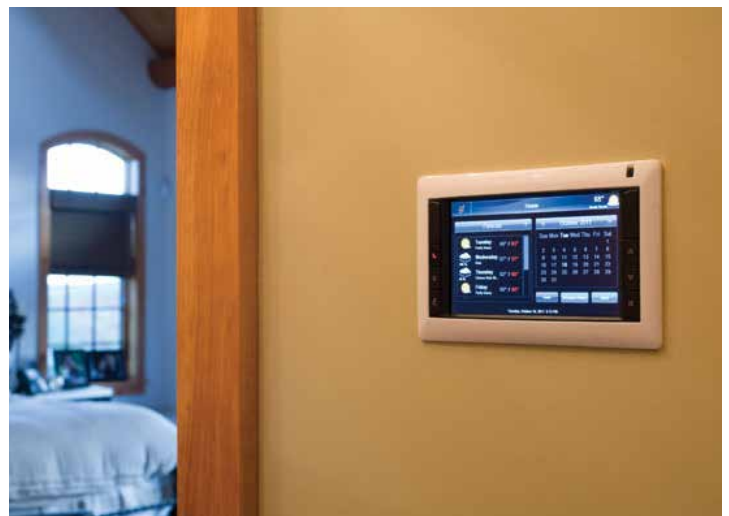
## Every Home Needs

**HOME AUTOMATION SYSTEMS ARE AMAZING** applications of technology. They can manage, monitor, command and control just about anything that draws electrical power. The sky is truly the limit as to what you can automate, and there are many homeowners who take full advantage of their automation system's extensive control capabilities. However, like everything else, the more elaborate you get, the more it's going to cost. All those bells and whistles in your luxury sports car probably cost a mint; it's no different when you start pushing the automation envelope.

And here's the real clincher. Those extravagant automation features often end up being the ones you barely use. Sure, it's fun to show your friends how your system can activate the shower when you touch a button on your iPhone, or have them witness the colored light show that commences every evening around the swimming pool, but these features represent a home automation system's more superfluous side. It's the brag-worthy stuff you crave but could honestly do without. Although there's nothing wrong with getting outrageous with your automation schemes, where a system really shines is in its ability to handle the everyday, ordinary, mundane tasks around your house—the locking of doors and turning off of lights; the lowering of window shades and the adjusting of thermostats. These are the meat-and-potatoes type of features that will make a real difference in your life. You'll feel safer in your home, save money on electricity and streamline your daily routine. So when you contact a custom electronics (CE) professional to design and install a home automation system (or elect to design and install one yourself), concentrate your efforts on what will help your household run smoother and more efficiently. Focus on what will bring you priceless peace of mind. Be mindful of the money you spend on things you could always add later. To help you stay on track, we've compiled a list of the top 10 automation features that almost every home and family needs.

### 1. Dimmable, programmable, push-button, controllable lighting

Think about all the time you spend turning on and off your home's lights. Consider how often you've left the lights on when you've left the house or gone to bed. Imagine what it would be like to have the lights set themselves to the perfect, eye-pleasing level for an elegant dinner party at your home. A home automation system can set every light fixture in your home exactly the way you want it—and all you do is touch one button on a keypad, touchpanel or screen of your smartphone or tablet. In seconds you can command a particular group of lights or every fixture in the house.





## 2. Security-focused settings

So much of what a home automation system does hinges on whether you're home or not, and whether you're awake or asleep—which is akin to how most security systems operate. Consequently, creating security-like automation “scenes” like Home, Away, Goodnight, Good Morning and Vacation is a smart idea and it works well for almost every household. Here are a few good basic automation routines you may want to try: In addition to having your home's security system arm when the Away mode is engaged, have the lights and the A/V equipment turn off. When you disarm the security system by pressing the Home button, have the automation system also activate certain lights, adjust the thermostats and play your favorite music over the home's loudspeakers.

## 3. Climate control

One of the toughest pieces of technology to handle in a home is a programmable thermostat. It should be a cinch to schedule daily thermostat adjustments, but most people find the process complicated and confusing—so much so that the thermostats never get programmed. And that's a shame, because households stand to shave a significant amount off their utility bills by lowering the temp at night, when the house is vacant during the day, and keeping lesser-used areas like guest bedrooms set at energy-saving levels. Sure, you could toggle the thermostats several times a day manually, but chances are, you'll forget ... or just get lazy and not do it.



By putting a home automation system in charge of the stats you'll be able to use the much simpler screen-based interface of your home automation system to establish schedules. The system will then remember when to adjust the settings, and will do so automatically every day, without fail.

## 4. Alerts and notifications

Expect the unexpected—it's a rule that most homeowners have learned to live by ... and accept as a normal part of home ownership. However, this doesn't mean you shouldn't be prepared. A home automation system can be the eyes and ears of your house by monitoring for mishaps like a leaking pipe in the basement, surprises like a package at the front door and potential problems like a door that's unlocked or a window that's been left open. The way by which a home automation system can alert you to these situations can include a text message to your phone, a chime that is broadcast over the speakers of your home stereo system or video that pops up on the screen of the TV. You can then respond appropriately; for instance, turning off the main water line or locking the front door remotely from your smartphone.

## 5. Time-based settings

One of the most prolific of a home automation system's features is its built-in astronomical timeclock. With this internal device, a custom electronics (CE) professional or you (if you plan to install a system yourself) can create precise daily schedules for the electronic components in your house to follow. For example, at a predetermined time each morning your home automation system can signal the lights in the kitchen to turn on, the thermostat to adjust and your favorite news radio station to play through the bathroom speakers. At other times you've selected, the home automation system can close the

motorized draperies, arm the security panel and activate the gas fireplace.

### **6. Remote access**

It's one thing to be able to tap a button to command multiple electronic devices when you're at home; it's another to be able to do it when you're at work, on the road or on vacation. Most home automation systems allow you to conveniently monitor and control devices in your house from a smartphone, tablet or PC with the same level of simplicity as you can from a touchpanel mounted to a wall inside your home. You can prepare the lights, thermostat, hot tub and music system for your arrival as you drive home from the airport. While on a business trip you can confirm that the doors are locked and view real time video from surveillance cameras aimed at the front porch and other areas.

### **7. Pathway lighting**

Lights that activate automatically to lead guests from the driveway to the front door, kids from their bedrooms to the bathroom and midnight snackers down the hallway to the kitchen are helpful to every household. You can expand on these ideas by using an automation system to illuminate safe, friendly pathways anywhere in your house and yard. Per the edict of a home automation system, these pathways can activate when motion is detected in a certain area, when a particular door opens or at a prescribed time of the day.

### **8. Vacation settings**

It's a dead give-away that you're not home when the lights turn on and off at the same time every day, and your house is free game for a burglar. A home automation system expands on the concept of a lived-in look, but with much more realism. The lights, motorized shades, and other electronic devices adjust randomly instead of in a predictable pattern.

### **9. Audio and video menus**

Think of all the content that's accessible to you through your home audio and video components: streaming music, downloadable video, entertainment stored on hard drives, and traditional discs. It's a lot to sift through. By tying your A/V equipment to a home automation system you can peruse your entertainment choices via the same touchpanel or tablet that you use to shoot commands to lights, motorized window shades, and more. You'll be to view your video and music library on a screen that's engaging and interactive, from which you could even launch a command that dims the lights and starts a movie.

### **10. Housewide monitoring**

When most people think about home automation, they envision a system that alters the electronics in preparation for something—bedtime, a party, whatever. And while this capability is definitely appealing, sometimes it's helpful to assess the household situation before launching commands. For example, you might want to see which windows might be open before leaving the house or check on the temperature of the wine cellar. A home automation system can continually monitor the status of all devices that are tied to it and present the data on the screen of a tablet, smartphone or touchpanel. It's an easy way to keep tabs on all the important parts of your house.

# 26 Amazing AUTOMATION TRICKS

**HOME AUTOMATION SYSTEMS** are wonderful tools for managing the common routines of a household. That's why most people buy them. After all, who wouldn't want the lights to shut off automatically at bedtime or the window shades to close whenever the sunshine gets too intense? Settings like these could be considered fairly ordinary—extremely helpful, definitely, but not all that creative or innovative. There are times, though, when homeowners and their custom electronics (CE) professionals push the automation envelope by using their systems to perform some truly unique feats. We've compiled 26 of the most creative automation setups based on conversations with homeowners and CE pros. After you've covered the basics (see Top 10 Automation Features on page 8), don't be afraid to step outside the box and do something special with your own system.



## 1. Take a Tour

Many of our projects can take upwards of four years to complete, so naturally, the homeowners are excited to show off their automation system soon after they've move in. We create a House Tour button that sets the entire property to its most beautiful: the lights, projection screens and TVs that display preset content, fountains and even customized Pandora music to broadcast through the home's speakers at the perfect volume level. – Jason Voorhees, Cantara Design, Costa Mesa, Calif.

## 2. Tone Down

For clients who really crank up the volume when they watch a movie, it can be difficult to hear the phone ring or an intercom call from the gate at the driveway. By interfacing the phone and intercom systems with a home automation system, the TV show or movie can pause temporarily so the homeowners can answer the call and invite people into the house. After everyone is settled, the owners press play on their home automation touchpanel to resume watching the show. – Jason Voorhees, Cantara Design, Costa Mesa, Calif.

### 3. Tee Time

You don't need to head to the links when you have a golf simulator in your home. And, thanks to a clever control button that the CE pros at Digital Home Technologies, Palatine, Ill., incorporated onto an Elan g! touchpanel, the owners of an automated Chicagoland home don't even have to wait for the projector to warm up before they start swinging. From a touchpanel on the first floor of the home, the owner touches a single button to activate the projector, audio system and golf training system that resides in a special room in the basement. By the time the owner makes it to the simulation room, the system is ready to go.



### 4. Scare Tactics

Who needs a shrieking alarm when you can scare intruders with your own voice? Motion detectors aimed at the backyard can trigger an announcement (but only after midnight, or whichever time you choose) to broadcast loudly over exterior speakers a message such as, "You have been photographed using high-definition cameras with motion detection!" – David Huse, Theater Advice, Dallas, Texas

### 5. Alone Time

Whether you're truly by yourself or with only your spouse, an automation system can help you savor this precious alone time. Touch a button on your smartphone to dim the lights, activate the gas fireplace, close the motorized shades and play some romantic music. – David Huse, Theater Advice, Dallas, Texas

### 6. Mail Call

Stop needless trips to the mailbox (particularly aggravating for owners of long driveways). A sensor mounted to the lip of the box can trigger an automation system to play an alert (a chime, a verbal announcement, etc.) over the speakers in your house.



### 7. May the Force be with You

The owners of a home theater in Minnesota asked the CE pros at Admit One Home Cinema, Edina, Minn., to incorporate battery-powered light sabers into the entertainment action. When the owners hit a switch the sabers glow in either red or green and Star Wars-like audio effects play over the home theater speakers.

## 8. Spine Tingling Action

Who says your remote control has to look like a remote control? Or that a keypad must be mounted to the wall? To blend technology into a wooden paneled home library, the CE pros at Performance Imaging, Stamford, Conn., fitted the pushbutton controls for the room lights into the spine of a book. Located on a bookshelf near the entrance of the room, the controls are within arm's reach as the family walks inside.

## 9. Liquor License

Keep the kids (or anyone else) out of the liquor cabinet, wine cellar or anywhere else you stash the booze by programming an electronic lock into your home automation system. A numeric code, which can be entered via the screen of the automation system's touchpanel or iPad/iPhone app disengages the lock.



## 10. A Better Angle

For large rooms where TV viewing might take place from several spots—the couch, the kitchen barstools, the chair by the computer desk—a mount that allows the TV to be swiveled in different directions is a helpful tool. Take it one step further by having your CE pro install a swivel that's motorized and can be controlled from a handheld remote.

## 11. Bay Watch

Views of migrating whales and sunbathing turtles can be viewed in high-def color from the screen of any AMX touchpanel in one family's Maui vacation home. The AMX home automation system was engineered by Art and Automation, Wailuku, Hawaii, to access two high-definition Axis IP cameras—one that's aimed at a beach frequented by dozens of turtles, and the other at the ocean. By navigating the icons on the screen of a panel or PC, the owners can engage the 20x optical zoom for a closer look, often catching a glimpse of a whale. The cameras can each be panned and tilted, or set to one of five different preset positions so they can check out the entire beach and back yard.



## 12. Easy Button

To showcase just how easy an automation system makes managing a household, the CE pros at Gramophone, Timonium, Md., purchased an authentic Easy Button from Staples and rewired it so that it could communicate with their client's Crestron automation system. Pressing the Easy Button launches a string of commands to prepare the family room for a night of entertainment: the lights dim, the motorized shades lower, the



TV turns on and displays a menu of movies in the owner's media library, and a Frank Sinatra concert plays over the speakers.

### **13. Getting Hosed**

A Virginia homeowner devised a genius way to water the plants in a second-floor window flowerbox. "I tapped into the bathroom sink with an automated valve and shutoff so we would be able to winterize the line. The water line was fished through the wall and exits to the exterior just behind the window box. I then connected the valve to a Vantage automation system and programmed the water to run automatically every other day for 45 seconds between the months of April and October."

### **14. Storm Trooper**

Mother Nature isn't always so kind to outdoor home theaters. So when designing one for a family in New Jersey, the CE pros at High-Def Zone, Lehigh Valley, Pa., tied a weather station to the system that controls the home theater gear. Should the weather station detect a wind velocity of over 8 miles an hour, it signals the control system which responds by instructing a motor to roll the screen up into a protective soffit. Only when the conditions are safe will the system allow the screen to be rolled down into viewing position.

### **15. Fish Tale**

The owners of a West Michigan home found a clever way to infuse their home with a bit of their favorite tropical vacation destination. With the help of the CE pros at Bekins, Grand Haven, Mich., an Internet-connected salt water aquarium was programmed to react to the weather conditions in Fiji. The lights inside the tank turn on and off with the sunrise and sunset of the island, and if there's a thunderstorm, the lights flash to mimic lightning. If the ocean is waving in Fiji the aquarium water rolls, too. According to the homeowners, these realistic changes to the environment inside the aquarium help promote growth of the coral.

### **16. Ship to Shore**

Living on the water has its advantages, but smart lake house dwellers know that the shorefront provides an additional entry point onto the property by people they don't necessarily want dropping in for a visit. That's why for some of his customers CE pro Mark van den Broek, SmartHouse Integration, Sarasota, Fla., installs a system that transmits an invisible photoelectric beam across the shoreline. Should a boat or a person break the beam, the system can alert the homeowners by sounding a chime.

### **17. Toy Land**

A Florida homeowner commissioned an artist to make a ceiling fixture that resembled a Hoberman sphere. This popular classic toy, which resembles a geodesic dome, was motorized to open and close in a scissor-like fashion, and tied to a home automation system so that colored LED lights are synched with the action. – Mark van den Broek, SmartHouse Integration, Sarasota, Mich.



## 18. Virtual Reality Room

An Elan g! system and clever custom programming by the CE pros at Creative TSI, Calgary, Alberta, combined to morph a gaming room into a concert venue, golf course, or disco—depending on which disc the homeowner loads into the Xbox 360 Kinect video gaming system. If it's Tiger Woods PGA Tour 13, for example, green LED lights in the room activate to make the room look and feel like a golf course; if it's a concert DVD, a fog machine emits a light mist through a small porthole in the wall and lights move in sync with the effects on stage.

## 19. Throwing in the Towel

A typical Good Morning command launched by a home automation system would open the bedroom window shades, gradually bring up the lights and play the morning news over the room's built-in speakers. For the owners of a coastal California home, the CE pros at Home Control Solutions, Santa Barbara, Calif., also threw in the towels ... or rather, a towel warmer. The towel warmer, as well as the master bathroom's radiant floor heating system, are ready when the owners hit the shower.

## 20. Garden Party

The CE pros at Yacht Tech Solution, Stuart, Fla., added realism to a homeowner's Japanese gardens through the clever use of motion sensors. Placed strategically among the landscape, the sensors signal a Crestron home automation system, which activates outdoor light fixtures, speakers and a misting system in a perfectly timed sequence to guide guests through the illusion of a rainforest. On cue, the sound of crickets plays through marine-grade outdoor speakers, and a light mist brushes over the lawn.

## 21. Eye Real Opener

Per the request of a client, the CE pros at Electronics Design Group, Piscataway, N.J., employed a retina scanner as the "key" to open a wine cellar. Upon recognition of the owner's retina, the automation system alters the glass door from translucent to clear, unlocks the door, activates the wine cellar's light fixtures and plays the sound of an opening door from Star Trek through the room's hidden speakers.

## 22. Getting Tanked

For a client who lives on a remote stretch of the Pacific Coast Highway the CE pros at Automation & Entertainment used a Crestron automation system to monitor the home's 35,000-gallon water storage tank, as well as the status of a backup generator, propane tank and diesel fuel tank. Numerous sensors gather data and communicate information to the home's Crestron touchpanels.

## 23. Dust Mite

It's a dirty combination: an intricate chandelier dangling from a high ceiling. With the help of a home improvement contractor and a CE pro, the dust-magnet can be lowered on command from a remote for regular cleaning.

## **24. Going to the Dogs**

A mudroom that doubles as a bedroom for a family's two dogs features an automated nightlight for the pooches. A single tap of a Goodnight button on a keypad sets the mudroom lights to a 20 percent intensity level. At 11 p.m. the lights shut off completely. – Casaplex, Kensington, Md.

## **25. Water Works**

The owners of a Missouri home can run water for a bath or shower by touching a button on their iPads. She has her own button that sets the water temperature and showerhead velocity to her liking; his button caters to his bathing and showering preferences. –HD Media Systems, Jackson, Mo.

## **26. Sending out an SOS ... for Toilet Paper**

An SOS button on a keypad in the powder room serves as a distress signal when an occupant is out of toilet paper. "When we see the chandelier blinking through the powder room's transom window, that's our cue to grab more TP," says the homeowner – HD Media Systems, Jackson, Mo.

## USEFUL LINKS

IF YOU'RE INTERESTING IN LEARNING MORE ABOUT HOME AUTOMATION AND OTHER HOME TECHNOLOGY PRODUCTS OR SYSTEMS, CHECK OUT THESE USEFUL RESOURCE SITES:

**FIND AN INSTALLER: LOCATE A PROFESSIONAL IN YOUR AREA WHO CAN SET YOU UP WITH YOUR DREAM SYSTEM.**

**[HTTP://RESIDENTIAL.FINDINSTALLERS.COM/FINDINSTALLERS/INSTALLERS](http://residential.findinstallers.com/findinstallers/installers)**

**ELECTRONIC HOUSE LEARNING CENTER:  
HELPFUL ARTICLES ON A VARIETY OF HOME TECH TOPICS.  
[HTTP://ELECTRONICHOUSE.COM/TOPIC/TAG/LEARNING\\_CENTER/](http://electronichouse.com/topic/tag/learning_center/)**

**ELECTRONIC HOUSE COOLEST HOMES: INSIDE LOOKS AT THE BEST INTEGRATED HOMES OFFERED FOR YOUR INSPIRATION.  
[HTTP://ELECTRONICHOUSE.COM/COOLHOMES](http://electronichouse.com/coolhomes)**