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Control4 Home Theater and Home Automation System Part 1

Building an automation nation—one house at a time.

→ **BY** Darryl Wilkinson

I reviewed Control4's first offering in February of 2006 (oh, those were the days, weren't they?). The system—based around the company's $599 Home Theater Controller (HTC)—could easily have been described as a universal remote control with grand aspirations. As the name implies, the HTC was designed to control the components in a home theater (including access to a stored digital music library) with a simple, highly intuitive onscreen graphic user interface. That by itself was pretty sweet. But behind the HTC's deceptively blank faceplate was hidden a formidable engine capable of powering a sophisticated wholehouse automation and multiroom music system using a combination of Ethernet, Wi-Fi, and ZigBee communication to control things like lights and thermostats as well as distribute music around the house. All you had to do was pony up the extra bucks for the wireless ZigBee thermostats and light switches (up to 125 of them—but at $100-plus a pop, it was unlikely that you'd ever max out the system). You also needed some Control4 Speaker Points, plus the labor to install and program everything, and you were ready to command and conquer the homeland. I liked—no, I lusted after—that original system and was extremely reluctant to box it up and send it back. It couldn't necessarily do all the amazingly complex things that a Crestron or AMX system could do at the time, but it was a fraction of the price.

In the years since, Control4 has issued a number of revisions and updates to its original 1.0 system software, adding features and functionality and fixing its share of glitches. From time to time, I talked with the Control4 folks about doing a follow-up review to cover some of the changes, but the timing never seemed to be quite right. Last year, however, Control4 released a major overhaul of its operating system, going from OS 1.8 to OS 2.0. It would take a full page or two just to list the new and/or improved features that OS 2.0 offers. What's really exciting is the scope of possibilities the new OS 2.0 opens up—everything from simple third-party apps that, for example, make it easy to listen to Web radio stations to more elaborate applications like energy management and home healthcare monitoring. It's a darn near limitless platform.

These new capabilities certainly make the life of a reviewer much more fun, but it makes the job of reviewing the system much harder. Whereas the original Control4 system was a relatively straightforward and typical setup (one theater room, two zones of audio, and a light switch), a new Control4 OS 2.0 system can be as different in my home from your home as my kids are different from yours. (And thank goodness for that.) You may never take advantage of some of the possible features, such as motorized shades or energy management. Other features that aren't included in this review system, such as wireless thermostats, you might find indispensable. (To tell the truth, I'd love to have one myself.)

Down to the Basics

There are some basics that are common to every Control4 system. Each one includes at least one or a combination of three system controllers: the HC-200B ($399), HC-300C ($699), and HC-1000 ($1,599). The tiny HC-200B is small enough to hide behind your flat-panel HDTV (that's where the one in my system sits). It's also affordable enough ($578 with an optional SR-150 handheld remote) to buy solely for use as a mid-priced universal remote control that includes some awesome onscreen menu navigation capabilities. Unfortunately, the HC-200B has no HDMI video outputs—only composite and component. But you can program the HC-200B to use a component input on your HDTV to display the onscreen GUI (as mine does) and switch to the TV's HDMI input for everything else. The big bonus is that you can add home automation features, such as lighting (dimmers run about $129 each), temperature control (wireless thermostats are $249 each), even motorized door locks ($335 and up) and remote zone Speaker Points ($399 wired/$449 wireless) for multiroom music whenever your budget can tolerate it. While it certainly isn't chicken feed (which, in my town, runs for about $7.99 per bag on sale), it's possible that for around a thousand dollars (including labor) you can get an A/V system controller with a couple of light dimmers—and be able to scale up to multizone audio, security, climate control, and energy management in the future.

The HC-300C has more connections than the HC-200 but the same processing power. It includes an SR-250 handheld remote (with an OLED window for system navigation without using an HDTV). It also offers video sensing capability, relay and contact connections, two serial connections, along with composite, S-video, and component—but still no HDMI—outputs. The HC-1000 is a supplemental controller that's used with one of the other two controllers to increase the responsiveness of large systems. It's basically a big brain with lots of processing power, an Ethernet jack, and a

Control4's InfinityEdge in-wall touchscreen interface is available in 5- and 7-inch sizes. It comes with a low-profile wall mount and a sleek capacitive glass screen.

● Control4 HC-300C, HC-1000, and HC-200B Controllers

built-in 500-gigabyte hard drive for media storage plus a couple of USB ports for external hard drives. By the way, that big brain generates a lot of heat, which is dissipated by a fan that's not much quieter than an F-22 Raptor during takeoff. (OK, I'm exaggerating a bit; it's more akin to an Apache helicopter.) You'll want to install the HC-1000 somewhere other than in your theater. Fortunately, the only things the HC-1000 needs to get up and running are an Ethernet connection to your home network and an electrical outlet.

I have all three controllers in my system. My original intent was to use the HC-300C and HC-1000 in the main theater and use the HC-200B to control a separate Onkyo TX-SR605 AVR and DV-CP802 player in the bedroom. The HC-300C lacks HDMI outputs, and there are plenty of vagaries in both the cabling in my theater room and the drivers available for my ancient Sunfire surround processor. As a result, my installers from the SOHO Shop of St. Charles, Missouri, rejiggered the system design and used the HC-200B as the onscreen controller in the main theater room. The HC-300C and HC-1000 were then freed up to do everything else.

It's important to mention that although Control4's database has drivers for over 6,500 components, not every piece of gear—such as my Sunfire processor—has drivers readily available. That means either your installer will have to create a driver—as Joe from the SOHO Shop did in my case—or you'll have to think about updating your equipment to get the most

out of the system. According to Glen Mella, Control4's COO, drivers are available for over 90 percent of the models manufactured during the last four to five years. If your system is relatively new or you're buying a brand-new system, compatibility issues shouldn't be much of a problem. It won't be long before Control4-certified manufacturers actually embed some or all of Control4's controller capabilities in their own components. In that case, you might not even need an HC-200B or HC-300C. One example that should be available around the time you read this is a new surround processor from Sherbourn Technologies that will have a ton of HDMI connectivity plus a built-in HC-200B. (Hurry up, Sherbourn, I'm waiting.)

Pieces of Eight

The system Control4 sent me includes eight zones of audio plus the main theater. Four of the zones (kitchen, downstairs bathroom, pool table room, and back patio) are individually powered by Control4's $1,195 dedicated four-stereo-input 60-watt x 8 amplifier. In addition to full matrix switching and independent volume control, the amp includes bass, treble, and five-band parametric EQ adjustments for each channel. Although Control4 stresses the retrofit-friendly nature of its overall system architecture, it took some good old-fashioned blood, sweat, and tears (plus a few choice words) to use the four-zone amp in my home since my house is so difficult to wire. This added significant

bucks to the labor portion of the system.

On the other hand, Control4's small (2.2-by-8.6-by-8.6-inch) Wireless Speaker Points are retro friendly, since they can communicate with the system controller via Ethernet or Wi-Fi. In addition to a built-in 40-watt x 2 amp, each Wireless Speaker Point includes one set of analog audio outputs for use with an AVR. There's also a set of analog audio inputs for use with a local source. You can configure the Wireless Speaker Point to digitize the input and make that local source—in my office, for example, it's my computer—available to the other zones in the house. I used three Wireless Speaker Points in Wi-Fi mode to run music to the hardest zones to wire in my house (master bedroom, master bathroom, and side patio). Because I already had an Ethernet drop in my office, I just used the existing cable to connect the fourth Wireless Speaker Point. Each of these zones is totally independent of the others. To test how independent they actually were, I ran three different streams of audio from Rhapsody along with a fourth zone of music from my network's NAS drive. I'm not sure I can conceive of a situation when we'd actually run separate streams to all of the zones simultaneously, but it's mighty impressive to know that the system can do it.

The way my system is configured has one quirk. Although the four-zone amp has four pair of analog inputs, the HC-300C has only two pair of audio outputs. That means at best, I can only listen to two sources (one analog and one digital) simultaneously—or the same source, of course—in the four zones that the Control4 amp powers. (Should I ever find this to be a problem, Control4 also has a 16-by-16-channel audio matrix switch; but I couldn't justify the $1,295 price tag.) However, there are often times when we want to listen to two different digital sources in the mornings in the kitchen and bathroom. Fortunately, iPort sent an IW-22 in-wall iPod dock, which lets my son use his iPod as a local source in the bathroom while I listen to POTUS on XM in the kitchen.

Appy Days Are Here Again

Although it's currently underutilized, OS 2.0's most promising feature is its ability to download apps

from Control4's 4Store marketplace. Yes, this is the same concept as with an iPod or Android device where you can browse through various applications and download the ones you might find useful or pleasantly time-wasting. As with the app selection for the other devices, there's a mixture of free and pay apps. But with only approximately 125 apps available, Control4 still has a long way to go in order to make this a truly compelling part of the system. (There are no fart apps, for example.) Before you buy an app, it's important to note which screens the app is designed for. Some only work on Control4's 5- and 7-inch touchscreens and not on the iPod touch or iPad.

Control4 is hoping to attract third-party developers who will create apps that Control4 either doesn't have the manpower to develop or simply hasn't thought of. (Surely, someone at Control4 must have thought about a fart app.) Of the apps currently available, there are a couple that stand out, such as the Web Radio app. At $30, it's expensive in a world that's used to apps for under two bucks. But it makes listening to free Internet radio stations in the various zones of your home as easy as—if not easier than—listening to Rhapsody's subscription service on the Control4 system. Web Radio ties in to SHOUTcast's Internet radio directory, sorts stations by category and genre, and makes them available to select from any remote or screen.

The other standout is the Eragy energy-monitoring app. This one uses cost data supplied by your utility company and lets you monitor your home's electricity costs on as small as an hour-by-hour basis. In addition to predicting what your bill will be at the end of the month, the information will help make you more conscious about the amount of electricity you use every day. Eragy's intelligent home energy-management app uses that info to work behind the scenes and reduce electricity costs by, says Eragy, up to 30 percent a month. It does this by turning ZigBee-enabled outlets and appliances on and off at appropriate (and convenient) times based on your programming criteria. In my case, I get a flat usage rate from my utility company, so every kilowatt-hour costs the same. Other utility companies base their rates on the time of day and system-wide demand. For these customers, Eragy's energy-management app will really pay off.

The energy-monitoring app is currently free—but there's a catch. You have to spend around $200 for The Energy Detective's TED5000 monitoring device that connects directly to your breaker panel, plus a subscription fee for the Eragy service. The TED5000 sends usage info to the Control4 system where Eragy's app interprets and displays it. To take advantage of the energy-management app, you'll also need the necessary ZigBee-enabled outlets or (in the

future) appliances. I haven't been using the TED5000 and the app for long enough to get a good history of my electricity usage, but it's already gotten me thinking about how I can cut down on how much we're using. (Do you think my family will notice that I turned the thermostat down to 62 degrees?)

Light One Up

Although I find most aspects of the Control4 system to be slicker than snot, by far, lighting control is the slickest (after theater control, that is). Lighting control is one of those things. Once you start converting conventional light switches and dimmers into ones controlled by the system, you won't want to stop until every light in the house is under your thumb. Because all the lighting devices use ZigBee to communicate wirelessly, it's especially retro friendly. In fact, ZigBee devices set up a mesh network that can "heal" itself, so the more devices there are on the network, the more robust the network is. Unfortunately, cost is a major concern. Wireless dimmers and switches cost $129 each, plus the labor for your installer to swap out the current switch and ID the new one in the system. Depending on the size of your house, changing out all the switches and dimmers could cost a small fortune.

If you don't understand exactly why I'm so enthusiastic about lighting control, let me give you the classic scenario. You're ready to watch a movie, so you press Play on your remote control. As the Blu-ray player boots up, the lights in your theater gradually dim to a preset level. Contrast that with running around the room switching off lights and then stumbling back to the couch in the dark. But it gets better than that. In fact, lighting control is only limited by your imagination and your dealer's programming acumen. For example, my house has three lights on Control4 dimmers and two on non-dimming switches (I wish I had more), which the SOHO Shop originally programmed as part of several lighting scenes. In addition to All Lights On and All Lights Off (especially useful at night when you realize you left a hallway light on), I also have a button

on a keypad at the top of the bedroom stairs that initiates a pathway light scene in which the lights on the way to my office turn on (or off when I return). I used Control4's Composer Home Edition software to program some other simple things, such as turning the front porch's Christmas lights on at sunset and off again at midnight. I also programmed the system to monitor the motorized door lock on the back door. When someone unlocks the door, the hallway light automatically turns on.

Lockdown

Did I just say motorized door locks? Yes, another extremely useful and amazingly fun add-on to a Control4 system enabled by OS 2.0 is a fully automated, motorized Baldwin Home Connect ZigBee deadbolt lock. What's the big deal about an automated door lock, you ask? (And why all the questions?) Well, for starters, it's nice not needing a key—you can unlock the door with a four-to-eight-digit code. For the first few days, we all had fun just making the deadbolts lock and unlock. (We're easily amused.) But after the fun (and the sun) fades, the value of the locks becomes quite apparent. In my case, I've programmed the impressively sturdy and very beautiful Baldwin deadbolts (a variety of styles and finishes are available) on the front and back doors to lock at a specific time each night. That way, I never have to wake up in the middle of the night and get out of bed to check whether or not I

remembered to lock the doors. If I'm concerned that my sons may not have locked the door after they dragged themselves in at night, I can use a touchscreen remote to check on any lock's status. If they did forget to lock the

• Baldwin Programmable Door Locks

door, I can lock it from bed (as long as I can reach the remote).

Control4's 4Sight subscription service ($149 per year) lets you access your system from anywhere in the world over the Internet. Access involves both monitoring (so you can see if those doors are still locked) and controlling (so you can lock them if they're not). The 4Sight service gives you instant e-mail alerts to all sorts of events. In the case of

the door locks, you might program the system to send you an e-mail when the batteries in the locks are getting low. Or you could have the locks trigger an e-mail alert if any of them are opened between, say, 8 a.m. and 3 p.m. (when no one should be home). If you have IP cameras installed as part of your Control4 system, you can see who opened that door, too.

The Scope of Things to Come

As I mentioned earlier, the scope of all that a Control4 system can potentially do is hard to get your arms around. So far, I've talked about the coolness of being able to control your lights and lock your doors from as far away as the other side of the globe. Control4 has barely scratched the surface when it comes to the future possibilities inherent in the company's app store. (Web radio and energy monitoring are just the beginning.) But there's so much more to talk about, we can't fit it all in one issue. Coming up next month, you'll find out about motorized shades, the importance of a good wireless network, and all the ways you can control and command all this powerful electronic goodness. And most importantly, you'll find out what I thought of the system once it was all done. ☏

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THE SOHO SHOP

The SOHO Shop's Brian Jefferson, Coiley Reeves, and Scott Mosher

Just as the most important—but often most underappreciated—component of a home theater system is the room itself, the most important part of any home automation system is the dealer/designer/installer (in this context, I'll use these terms interchangeably). Whether it be a minimalist X10 system cobbled together piece by piece on the cheap or a half-million-dollar Crestron/Lutron system that runs lighting, security, sprinklers, and toilet-seat pre-warmers, the system won't do what it's supposed to do if the communications and underlying programming logic aren't what they need to be. If the X10-controlled bathroom light turns off while you're still in the shower, that may not be a big deal. But if you're asking the system to unlock the front door for your daughter who forgot her code while she's waiting in the freezing rain, accuracy and consistency are important. And, of course, you'd like the system to stay locked if someone you don't know is trying to get in.

System reliability isn't the only thing you'll get from hiring a really good dealer. The imagination and creativity a good system designer will bring to your home is worth many times the actual labor cost in added features and functionality. I'm talking about the kinds of things that make less experienced installers say, "How in the hell did you do that?!"

But competency and creativity aren't the only qualities you need in a good designer. Listening skill is the most important aspect to look for when you pick a dealer. Yes, those listening ears from kindergarten are an installer's most valuable tool. That's because regardless of how brilliantly creative your installer is, if he isn't designing a system that's built around your wants and needs instead of his dreams and ego, you'll probably end up with a system he loves and you hate.

The SOHO Shop, the folks who drove the 80-some-odd miles to my house from their offices in St. Charles, Missouri, is a great example of an installing dealer that exhibits all of the above qualities. With backgrounds that include helping to deploy the communication infrastructure for the FIFA World Cup program (plus a stint in the Marines), these guys certainly know how to get the job done. In fact, they know it so well that they run a Website (c4central.com) filled with tips and information to help other dealers build and program better Control4 systems. They certainly weren't cheap—few excellent installers are—but they did a great job working with the idiosyncrasies of my 100-year-old house. This was not one of their easier installs, but they definitely rose to the challenge.

The SOHO Shop's storefront in St. Charles, Missouri

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Control4 Home Theater and Home Automation System Part 2

The wholehouse story. ➡ **BY** Darryl Wilkinson

Home automation is just too cool. There's no doubt about it. Sure, it's great to turn on your home theater system and go to the correct input or channel with the press of one button. But there are a number of good universal remotes that'll do that. I want to be able to use that same remote to turn the lights on and off, lock and unlock doors, raise and lower shades, and, well, anything else I can think of. (I'd like it to cook and clean, but I'm afraid domestic robots are still a bit further in the future.) In last month's issue, I highlighted parts of the latest incarnation of Control4's expandable home automation system, specifically how the company's three controllers and new 2.0 software update give you the ability to control your entire home theater, the lights in your house, and even door locks. Control4's 4Store marketplace will ideally let third-party apps expand the system in ways that Control4 hasn't thought of—such as managing the energy usage in your home. But there's plenty more to talk about that we couldn't fit in that issue. This time, in addition to the seduction of motorized shades, I'll cover some of the nuts and bolts of putting a Control4 system together, as well as what it takes to program and control it.

It's a Little Bit Shady

While lighting control and motorized locks eventually lose the "Golly, Mr. Wizard" feeling, for some reason, motorized shades and blinds never do. I don't know what it is. Ever since my installer (the SOHO Shop of St. Charles, Missouri) installed three motorized shades from MechoShade in the master bedroom, I can't resist pressing the button and watching the shades go quietly up and down whenever I pass the keypad. Sometimes, I use the Web app to make the shades move while I'm away. It's terribly addictive; and before you think I'm crazy, I'm not the only person I know who says this.

As a reader of this magazine, you probably equate motorized shades or drapes with window treatments in the home theater room. The windows in my theater are relatively small, and I already had blackout drapes installed. Up in the master bedroom, though, I have two large picture windows and a third smaller window. They let the sun shine in too much in the summer and seem to get the room down to absolute zero in the winter. Even without the Control4 system, I would have been able to raise and lower the shades by using Mecho-Shade's handheld remote control. But when you tie the shades into the system, you can program them for a variety of situations. Of course, I can raise and lower them at the touch of a button. But I can also program them to lower halfway in the summertime to cut down on the direct sunlight flooding into the room. Since the Control4 system uses your longitude and latitude coordinates to calculate daily sunrise and sunset times, the system can automatically lower the shades all the way at sunset every day for privacy.

The one thing I'm a bit unhappy with is that the shades don't communicate their up/down status back to the Control4 system. The various keypads and onscreen displays only show the last shade position known by that control device. For example, I can use the in-wall keypad to raise the shades in the morning while I'm in the bedroom; but the 7-inch portable touchscreen downstairs will still think they're closed. From what I understand, this is due to an incomplete driver issue, possibly related to the fact that the MechoShade shades don't have built-in ZigBee modules. They use an external ZigBee adapter, and the software driver for the adapter needs to be modified. In all other respects, I've been extremely impressed by MechoShade's mechanism, appearance, and overall operation.

The Importance of Being Wi-fortiFied

As I mentioned in the previous issue, ZigBee devices create a self-healing mesh network; the more devices, the more robust the network. Unfortunately, the ZigBee specification is designed for low-data connections. On the other hand, multiroom audio requires a bigger pipe than ZigBee provides. Where you're lucky and wiring isn't an issue, you can connect Control4's Ethernet Speaker Points to the system using a standard run of Cat-5 cable. Sometimes, though, you'll need a Wi-Fi Wireless Speaker Point to save the day. In some cases, the very same thing that makes wiring such a bitch—double-thick walls and multiple stories—can also hinder the transmission of a Wi-Fi signal.

Control4's home controllers communicate with each other—as well as the Speaker Points and some remote controls—via your home network. So it's very important that your router be stouter than the majority of the inexpensive ones that most people (including me) own. After some initial network communication and setup issues, Control4 and the SOHO Shop highly "recommended" that I replace my Linksys WRT54G with something else, preferably an Apple AirPort Extreme. Grudgingly, I made the replacement, and I

The newest iPort models are part of the company's Control Mount Series of fixed in-wall docks available for both the iPod and iPad.

• Control4 can be used with iPod, iPad, or laptop.

• Control4's InfinityEdge 7-Inch In-Wall Touchscreen

immediately noticed a much broader Wi-Fi coverage area than I'd had before. The new router eliminated some basic network communication issues that slowed down the system's responsiveness. However, even the better wireless coverage wasn't enough to slather my entire house in Wi-Fi goodness. So I talked with the folks at Luxul, a company that makes wholehouse Wi-Fi systems that use a single wireless access point.

The system that Luxul sent, the Pro-WAV Range Extender Kit with a dual antenna option, included a Netgear WG103 wireless access point along with two Luxul X-WAV Circular Polarized antennas. The SOHO Shop mounted the Kit in the center of the northern wall of the house and aimed the two antennas 90 degrees apart toward the two upstairs areas. After some tweaking, the wireless signal went from, "Eh, what'd you say, sonny?" to, "Turn that blasted music down!" Without it, it would have been difficult to get the Wireless Speaker Point in the upstairs bathroom to consistently get a good signal (and thus play uninterrupted music). It also improved overall signal strength throughout the rest of the house. That's a big benefit when it comes to using an iPad or iPod when you're walking through the house.

Luxul's Pro-WAV Range Extender Kit with the dual antenna option isn't cheap—about

$765. But I'd wholeheartedly recommend it to anyone with significant Wi-Fi distribution problems in their home, especially in a large home where you'd otherwise have to use and administer multiple access points. (Oh, the horror.)

A Remote in the Hand...
So how do you take control of all that processing power: a theater, lights, locks, shades, and eight zones of audio? In this case, numerous ways. For starters, there's the SR-250 remote that comes with Control4's HC-300C system controller. It's a traditional handheld remote that has a large red button with a Control4 logo on it. When you press this button, it turns on the HDTV and brings up the main Control4 GUI on the screen. From there, you point and click your way to what you want to do using the ubiquitous Control4 icon-based menu system. Once you've selected an activity, such as watching the satellite, the SR-250 works like a traditional remote with standard function/transport buttons. At the top is a bright OLED window (a light sensor varies the brightness depending on ambient light levels) that you can use to navigate through the system without the onscreen display. Control4's SR-150 remote control works similarly, except it lacks the OLED window. On both remotes, a press of the Control4 button always brings you back to the main menu screen.

Control4's 7-inch Wi-Fi touchscreen is a nice luxury to use in my theater because it replicates the onscreen GUI and lets me control things in that current zone—or elsewhere—without turning on the HDTV. Even more seductive is Control4's InfinityEdge 7-inch in-wall touchscreen. In addition to looking gorgeous in the wall, you can upgrade the InfinityEdge to include intercom capability. Less seductive but more affordable are Control4's six-button in-wall keypads. Although they don't provide a display, you can program each button to do up to three different things.

Another way to control the system is through your computer. A 4Sight subscription gives you access to a Web client that lets you operate your system as if you had a touchscreen in front of you. Control4 likes to stress one aspect of the onscreen GUI, the touchscreens, and the Web client. All of these ways of interacting with your Control4 system use the same Flash-based GUI layout. So no matter which method you use to interact with the system, the interface operates virtually the same way, even from home to home (for those with multiple-home syndrome).

Control4 also sells MyHome licenses ($199/each or $499/household) that let you use iPod touches, iPhones, iPads, or PCs as touchscreens. You might ask, why on earth would someone buy a dedicated touchscreen controller from Control4 when they could use an iPod touch or iPad and be a heck of a lot more hip and trendy? As a matter of fact, I asked that question myself and bought three refurbished Gen 2 iPods ($149 each) to use—along with the iPad I already owned—as touchscreen controllers for the system.

I did the math, and those refurbished iPods with the licenses to fire them up for use with the system came to $348 each (new ones, of course, would have run at least $70 more). At $199, Control4's SR-250 remote is definitely less expensive, but it's not a touchscreen. Interestingly, I prefer to use the SR-250 in my main theater because I always use the onscreen display on the HDTV. However, in the rooms without an HDTV, the SR-250 is more cumbersome to use—especially when I'm picking music selections from the NAS (network-attached storage) drive. I much prefer the iPod's full screen to display cover art.

The dollar comparison is more dramatic when it comes to using the basic iPad with a Navigator license ($698), since the iPad has a larger screen and is about $300 less than Control4's 7-inch portable touchscreen. On the other hand, in-wall touchscreens are a bit more

of a toss-up. iPort's new in-wall Control Mount Series brackets can turn an iPod touch or iPad into a built-in touchscreen; but there's the additional cost of the bracket to consider. For instance, an iPort Control Mount/Navigator license/iPod touch combo will set you back approximately $600—almost two-thirds the $899 invoice you'll get with Control4's 7-inch InfinityEdge touchscreen. But the screen on the iPod is smaller, and you'll lose the option of adding the intercom feature. For about $1,100, you can supersize your touchscreen experience and use an iPort Control Mount to mount an iPad in the wall (but still no intercom option). Of course, if you have three or more iDevices, opting for the $499 MyHome family license will cut the cost per device significantly.

There are a couple of important issues I've noticed using the Apple devices versus Control4's remotes and touchscreens. First, since Apple doesn't let you use Flash within the iOS, Control4 had to build these GUIs from scratch. As a result, they have a similar but not quite identical look. That's not a big deal, but it's something to be aware of. A more frustrating issue is that the iPod touch and iPad (in my system, at least) are sometimes a little sluggish to respond. This causes me to press the volume-up button too many times until it suddenly catches up and blasts me out of the room. At other times, the Control4 app needs to be restarted, and occasionally the iPod/iPad will ask to be re-authenticated before the system will accept commands from it. Control4 says this is a known Apple issue, which essentially means it's probably not going to be fixed soon.

Customize HE or ME?
Installers use a program called Composer Pro to set up, configure, and do just about everything else to get a Control4 system running—and keep it running if there are any problems that crop up or changes that need to be made. With a 4Sight subscription, you can give your installer remote access to your system. That might make you queasy—letting some dude across town/

state/country muck around in your system as he sits in his underwear and works on his third 5-hour ENERGY drink of the day. But it's really a big bonus to enable that feature. In my case, it's a 160-mile round trip every time the SOHO Shop fires up a truck and comes a visitin'. That's a pretty expensive service call before the guys have even opened their laptops at my house—especially if all I wanted was a small change in the GUI or to add an iPod to the system.

There are some changes that you can do yourself. Control4's Composer Media Edition (Composer ME) is free software that adds and scans media (the system doesn't find new files on the fly, you have to set up a scanning schedule). It also edits media information and creates playlists. It's very basic, easy to learn, and likely to be about as much as many people will want to be involved with when it comes to programming a Control4 system.

If you're more daring or simply can't stand the idea of not doing some of the personalization yourself (guilty as charged), Control4 offers the Composer Home Edition (Composer HE), which you can buy from your dealer for $149. I'm a little put off by the idea that you can spend multiple thousands of dollars on a home automation system and then still have to pop the equivalent of two tanks of gas for a Suburban on a piece of software that will let you do some of the customization yourself. But this isn't a program for the casual, "I just want the light on my front porch to go on at sunset and turn off at midnight." (Let your installer do that remotely.) Although Composer HE is drag-and-drop, you still have to understand the basics of programming logic, variables, and agents.

On the other hand, it's worth spending the money if you want to do some cool stuff, like have the system send you an e-mail when the batteries in your door locks are running low. You'll also have to spend some time on the learning curve (Composer HE's Getting Started document—you know, the sort of thing that's normally one to four pages—is a whopping 53 pages long, and the User Guide is 117 pages). Turning lights on and off, sending e-mail notifications, locking doors automatically at bedtime, and turning music on/lowering shades/dimming lights in the bedroom with one suggestive button press are just a few of the myriad of things that you can program using Composer HE.

One thing you can't do is add new hardware to your Control4 system. For that, you'll need

• Motorized Shades from MechoShade

your dealer. It may or may not involve a physical service call depending on your hookup ability and the dealer's level of comfort with the compatibility of the particular piece of gear you're adding. Either way, there'll be a fee, so be prepared.

Automation Nation
I can't say the Control4 system that the SOHO Shop installed isn't without flaws. (I'm not sure there's a home automation system that is.) As I mentioned earlier, the iPod/iPads' responsiveness can sometimes be sluggish. When I activate a new zone, there's often a brief break in the music playing in an active zone. Sometimes there's a weird change in the pitch of the audio at the beginning of songs. This is apparently due to congestion on the network, but it's random and difficult to diagnose. A couple of times, I've had to wait for the HC-200B system controller or the 7-inch portable touchscreen to re-establish connection with the system before I could watch TV. It's agonizingly slow to use the Web client to control the audio in my office from my computer, although the new MyHomePC app (which is included in the MyHome family license but wasn't available at the time of this review) is supposed to be much faster. It may also have had something to do with the fact that I have satellite Internet, and it doesn't play nice with lots of highly secure Websites. I have similar problems with GoToMyPC and Netflix, so I can't really lay the blame on Control4 for that.

Although I love the MechoShade shades, I wish they could report their status back to the

• The SOHO Shop mounted the Kit in the center of the northern wall of Darryl's house.

system. On the other hand, I never experienced a problem with any of the other ZigBee-enabled devices, like the lights and door locks. This lack of status feedback is an issue that plagues any automation system that's designed for use with a variety of equipment from different manufacturers. For example, my Russound XM tuner can't report what channel it's on. (You can pop $798 for a Control4 XM tuner to overcome that issue.) The HC-300C has video-sensing capability, but that only tells the system if a component is turned on. And it can't tell if my Sunfire surround processor is set on the correct input.

In spite of this, if you're thinking of a Harmony or other universal remote control, it's a no-brainer to find a dealer and check out a Control4 HC-200B. As a universal remote control with almost universal expandability, I don't know of another system remote that can truly compete with it in the price range. Of course, there'll be some dealer involvement, so be prepared for that. If you're a dyed-in-the-wool DIYer, a Control4 system may not be for you. But if you're comfortable with the many benefits of having your dealer do most of the heavy lifting, you have to look at Control4. There's precious little else out there that can handle the range of home theater control, lighting, security, and multiroom audio, and offer such scalability for the money.

The same applies for more elaborate Control4 systems. While an entry-level Control4 system is relatively affordable, there's no doubt that reliable home automation and multiroom audio in general can cost real money. For example, you might well think that a motorized door lock for $335 is outrageous (though there are plenty of people who pay more for non-motorized ones). In that case, don't add the door locks. Motorized shades, regardless of the manufacturer, are expensive. Skip them. You can start small and scale up from there. That's one of the beauties of the system architecture. Plus, with the 4Store marketplace, there's the potential to add lots of capabilities that haven't even been thought of yet (fart apps, anyone?).

Control4's COO, Glen Mella, told me that one of the company's goals is to turn home

● iPort CM-IW2000 iPad In-Wall Mounting Kit

automation/multiroom audio from one of those things that's nice to have into a gotta-have. I think they've hit the bull's eye. Once you've lived with a Control4 system, regardless of its scale and options, you'll wonder how you ever called your house a home without it. 📶

Control4 • (888) 400-4070 • control4.com
Dealer Locator Code CN4

iPort • (888) 45-IPORT • iportmusic.com
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THE iPORTALS

The iPort IW-22 is a small recessed alcove in which to dock your iPod.

While it's difficult to discuss the entire scope of a Control4 system, iPort is a little easier to get a handle on. The relatively small number of iPod dock–related products the company makes are all designed to make life easier when it comes to integrating an iPod into a multiroom A/V system. There are three flavors of iPort iPod docks: freestanding, in-wall removable (iPort claims to be the inventor of the world's first in-wall system for the Apple iPod), and in-wall fixed. To give me a better idea of the iPort concept and how well it works within the Control4 ecosystem, iPort sent one of each type of dock for the SOHO Shop to install in my system.

The iPort FS-23 ($450) is a sleek, freestanding iPod dock with an included IR remote that lets you control the iPod using an onscreen video interface that displays on a connected HDTV. While iPod docks are more common than sand in a camel's crotch during a windstorm in the Sahara (although, now that I think about it, I've never really tallied up either one), the FS-23 is a beautiful standout. In addition to a sleek and sophisticated two-tone glossy finish, the FS-23 includes a remote-zone IR control input, an RJ45 Ethernet jack, as well as audio and component video outputs. Optional balanced upgrade kits are available to extend the audio delivery up to 500 feet and video delivery up to 250 feet. Free iPortNetSync software from iPort lets you sync a connected iPod with iTunes on any networked computer.

My favorite iPort, the in-wall IW-22 ($600), is a small recessed

alcove in which to dock your iPod while you shower, study, or do whatever it is you do next to wherever it's installed. It my case, it resides in the wall between the shower and the toilet (or "stool" as my plumbers called it—a term I refuse to use) in my downstairs bathroom. The SOHO Shop wired audio from the IW-22 so that I can use a docked iPod as a local music source in the zone. I have a refurbished iPod touch, which I normally leave docked in the IW-22 so it's there when I need it, which is typically to listen to bowel-activating music when I'm holding court on the porcelain throne. On the other hand, my son slides his iPod classic into the IW-22 and uses the iPod touch to access his own personal music stash. As with all iPorts, the IW-22 continually charges any docked iPod. That's an important feature because an iPod running in Dedicated Control4 mode always draws power even when the screensaver is active. Undocked, a dedicated iPod will run out of juice in a couple of hours.

The newest iPort models are part of the company's Control Mount series of fixed in-wall docks available for both the iPod (CM-IW100T, $250) and iPad (CM-IW2000, $499). iPort sent a CM-IW100T for me to use in my kitchen where I definitely wanted to lock down the iPod I use for control in that zone. (There's nothing like dropping an iPod into

iPort's Control Mount Series of fixed in-wall docks.

hot French fry oil to limit its useful lifespan.) With the white magnetic faceplate snapped in place, it made my refurbished second-generation iPod touch look like a custom 4-inch in-wall touchscreen controller. As with the other docks, the CM series allows for audio playback, although I didn't have it installed that way.