



INSTALLATION SPOTLIGHT

Scott Residence,
Sedona, Ariz.
BY JACK KONTNEY

Intelligent AV in the Desert

Many traditional integration firms shy away from residential installations, largely because the electronics don't conform to the norms of pro AV connectivity. For others, however, the consistent growth in the market for smart homes and home theaters is a forward-looking business model.

Sedona, Ariz. is a town renowned for its natural beauty, with stunning views of unique red-rock formations. In this upscale community, smart homes are becoming the norm—especially in new construction. The recently completed Scott residence in Sedona is no exception. The house is more than 11,000 square feet on three levels, with a separate casita. The house's plans included a formal home theater and a comprehensive control system, so local builder R.G. Toogood Construction brought

in Smart Home Pro, a design and integration firm specializing in home theaters. System design was handled by company president Chris Hatala and lead engineer Don Hanson.

"It is a beautiful home in a beautiful setting," says Alan Rees, general manager of Smart Home Pro. "It shows how you can do a theater in a home while still taking advantage of scenery outside. So many times with home theaters, you think of them being in a basement, but the goal for this particular room was to create a very nice and good-sounding home theater in a room with a view."

With construction planned to be executed in three phases, early involvement was critical to creating a successful design.

"We try to get involved at the architectural stage, before anything is even coming out of the ground," Hatala says. "It just makes things easier for everyone. For example, if the electrician knows we're doing a full-blown lighting system, he knows that all those light circuits go back to a centralized location instead of switch locations. It totally changes the way they do conduit in the slab work."

The entire house was designed around Crestron control, with traditional wiring augmented by a



Using the Crestron Crestnet system, the Scotts can monitor and control their entire home via Crestron Isys touchpanels at home or the Internet when away.

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series of tech port outlets—each with two Cat-5E Ethernet and two RG-6 coaxial jacks.

The home theater is the centerpiece of a whole-home control system that provides centralized control for a computer, sound, lights, windows and shades, HVAC, and a CCTV security system. Smart Home Pro used a structured wiring approach, with tech ports throughout the house terminating in a central location. This allows for great flexibility in control and distribution—which is critical when integrating audio, video, Ethernet, and telephone systems.

HOME THEATER

The most important customer requirement on the project was the home theater—a Smart Home Pro specialty. A 110in. GrayHawk RS G3 fixed screen from Stewart Filmscreen is the focal point for the room, which features two rows of four large, comfortable seats. A Marantz VP-12S4L HD, long-throw projector provides the picture. A Dark Chip3 DLP design, the VP-12S4L features custom Konica-Minolta optics; it also houses a video-processing engine codeveloped by Marantz and Gennum. The projector handles DTV and HD signals up to 1080i, and it is discreetly mounted into a soffit beneath the 9ft. ceiling—providing ample noise control and optimal positioning.

It's the audio system, however, that makes the room shine. "We chose the JBL Synthesis Four surround system. There's simply nothing better on the market," Hatala says. The Synthesis system is designed to deal with the real-world acoustics of the room, compensating for the acoustic anomalies inherent in the layout and contents.

"We've been selling JBL Synthesis for about two years now," Rees says. "Their engineering is fantastic. We can install it in any type of room, and the system's advanced enough to measure and overcome any acoustical issues that we might not have been able to predict pre-install. So even when we can't design the room the way we want, or if the interior designer adds something unpredictable, the system is able to account for those situations and accommodate them. So it's very forgiving. It allows us to basically build a room to the customer's aesthetic requirements and not be as much of a stickler on the engineering-design side. If they want to have columns, or do a square room, or build a stage, or things they may want to do for design reasons, we know we'll be able to accommodate acoustical anomalies that may be created with those designs."

For the Scott home, Smart Home Pro specified a 7.2 surround-sound system. The loudspeakers, amplifiers, and processing are all by JBL, engineered for optimum performance when working together. All audio and video signals run through the JBL SDP-5 surround process/system controller. With the exception of the subwoofers, all loudspeakers have a flush-mount, in-wall design.

The front channels are three-way loudspeakers, with a center-channel S4HC loudspeaker below the screen and flanked by two matching S4VC loudspeakers mounted vertically. The four surround channels, S4AI loudspeakers, also have an in-wall design. A single JBL S7150 7x150W amplifier powers these seven loudspeakers. Two self-powered JBL HTPS400 subwoofers handle low-frequency duties for the room. All components are THX-certified. The entire investment is protected by a 13-outlet Furman Sound Elite-20 PF i power conditioner.

The key to the JBL Synthesis system is in its setup. As one would expect in a premium surround system, all loudspeakers are shipped with individual frequency curves.

"But like any speaker, those are ideal-world curves," Hatala says. "In the real world, that response is compromised by furniture, carpeting, room shape, construction materials—you name it. What Synthesis allows us to do is to recreate that ideal response in the real world."

This involves a tuning process that takes place after the room is constructed and furnished. Five mics are placed in the listening positions, and pink noise is played through the loudspeakers. The sound picked up is analyzed and adjusted, using JBL's proprietary SDEC-3000 digital equalizer.

The Synthesis SDEC-3000 packs an enormous amount of processing power into one rackmount box. Far more than a standard EQ, the SDEC-3000 is a digital, Ethernet-controlled 112-band parametric equalizer with DSP functions that include independent distance-time correction for each of its eight outputs. Each loudspeaker's output is adjusted individually and locked in, which is a process that takes 4 hours to 5 hours.

"It's all done on the initial setup, and we only do it after everything else is done," Hatala says. "The furniture's got to be in place, the curtains have got to be hung, so you have a true representation of what the room is going to be like when they move into it."

The Scott house offered the system a definite challenge when it turned out that the blackout curtain over the picture window also covered one of the side surround loudspeakers.

"It was for ambient-light control, so there was a good purpose behind it," Hatala says. "But it ran the entire length of the wall and had a plastic backing that muffled everything above 85Hz. With the Synthesis system, we were able to get that speaker to sound as good as the rest of the system. It was the best demo I could ever imagine. Even our JBL support engineer was surprised."

"I've got to hand it to JBL, because they really want this system to sound as good as it did in the recording studio where they made the DVD or CD," Hanson says. "They believe if you're going to spend \$40,000 or more on a sound system, it should sound amazing and it

should always be working. And they really do support it to that level.”

A factory tech is available to help with system calibration on request, and customers receive 24-hour advance replacement on any component that fails.

The system is controlled by one of the house’s 12 Remote Technologies (RTI) T2-C universal remotes, which combine familiar buttons with a detailed TFT touchscreen for full control of the home theater as well as a direct wireless interface to the Crestron-controlled systems in the home.

As one would expect, the video sources available are many, including a Sharp Blu-ray Disc player. A DirecTV H21-200 HD satellite receiver/DVR delivers broadcast signals. A Kaleidescape KSERVER-1500 media server system, networked throughout the house, offers up to 300 DVD and 400 CD selections for two movie zones and four music zones.

“The Kaleidescape is the Ferrari of media servers,” Hanson says. “It’s really fast, it’s easy to add new content, and you can even burn commercial DVDs directly to its hard drive.”

Significantly, the Kaleidescape system legally rips DVDs and CDs for home use. Direct hard-drive access makes the Kaleidescape system fast and user-friendly. An onscreen interface allows users to search by different criteria, and it displays cover art and information about each title.

MORE AUDIO AND VIDEO

Of course, with a commitment like this to the home-theater room, it’s no surprise to learn that the Scotts have electronic media throughout their home. A Crestron CEN-iDOC provides an iPod docking station that can access any genre, artist, or even playlists from any of the touchpanels and play it in any audio zone in the home. Video signals are routed through an Audio Authority AVAtrix video-distribution system, a Cat-5 matrix switcher that allows anything burned onto the Kaleidescape

media server to be viewed from any television in the house—and there are plenty to choose from.

High-definition flatpanel LCDs from Mitsubishi and LG Electronics are spread throughout the house, all of them controlled by RTI T2-C remotes. On the main level, the master bedroom houses a 40in. Mitsubishi Digital LT-40134 on a Chief Manufacturing MAC-500 wall mount with JWD swing arm. The living room boasts a 52in Mitsubishi LT-52244, and the two offices house LG Electronics 37LC7Ds, each fed by its own H20 HD DirecTV receiver. The kitchen parlor sports a Mitsubishi LT-46244, and the exercise room has a LT-52244—both hung with OmniMount ULPT-LB tilting wall mounts. Downstairs, the three bedrooms have Mitsubishi LCD sets of various sizes; they are all wall mounted with the ULPT-LB mount. In the casita, a Chief MAC-500 swing-arm mounts hold 37in. LG Electronics LCD panels on the living room and bedroom walls.

The RTI remotes also provide access to the music-distribution system. High-quality stereo sound is available in all the rooms already mentioned—as well as in the dining room, outdoor covered terrace, and living-room patio. Each area is installed with a pair of Bowers & Wilkins CCM626 two-way ceiling loudspeakers, which are flush-mounted for a low profile.

FULL CONTROL, HOME AND AWAY

The Scott residence is a fully realized smart home. Crestron Isys touchpanels are installed throughout the home, including a 10in. TPS-4000L master panel and five smaller 6.4in. TPS-3100LB units in key locations. The brains of the system are provided by Crestron’s Pro2 dual-bus control system, with a pair of CNX-PAD8A audio-distribution processors providing 16 zones of audio.

In addition to routing AV signals to their desired locations, the Crestron Cresnet control system handles a variety of hardware. It functions from any of these locations or from the wireless RTI handheld remotes. All computers are networked through a Linksys router, with wireless access points distributed for full access from any location in the sprawling house.

In a house of this size, a Vantage lighting system is a necessity. Extended bulb life and energy savings are icing on the cake. A total of 128 lighting circuits are managed, with switch and scene programming done by Hanson to customer specifications.

Another nice touch is the Home Automation OmniPro II security system, which deploys various sensors throughout the property to provide burglar and fire protection as well as heat, smoke, and carbon-monoxide detection. Four Silent Witness (now Honeywell) security cameras feed a Dedicated Micros 80GB, D4 series four-way CCTV recording system. System status—including perimeter door/window unauthorized-entry detection

Unlike traditional home theaters that are relegated to basements to cut down on light, the Scotts’ home theater is a room with an Arizona view. The home theater features a 110in. Stewart Filmscreen GrayHawk RS G3 fixed projection screen and a Marantz VP-12S4L long-throw HD projector.



and interior intruder detection—can be monitored on control panels in both the house and casita or remotely via the Crestron Cresnet system.

The system also controls the driveway gate, all HVAC functions, and the power window shades and motorized windows. Remote capabilities from a custom-programmed Crestron CEN-TIA telephone interface provide added convenience.

“Simply call your system from your cell phone and find out what the temperature is inside the house and adjust it before you arrive home,” Hatala says.

The Crestron system provides total control for both the customer and Smart Home Pro. “Virtually every system is IP-controlled,” Hatala says. “Anywhere the owners have Internet access, they have access to their home systems. They can change the lights, monitor the surveillance cameras, arm the security system, program the DVR, and even open the overhead garage doors for a delivery guy—literally anything they can do from the touchpanels in the house.”

The Internet-control capability allows Smart Home Pro to monitor and update systems remotely as well. Firmware updates and troubleshooting can happen remotely, significantly reduc-

ing the need to roll out a truck while simultaneously increasing customer confidence. If the Scotts want the touchpanels reprogrammed—even if it’s just a new graphic—it can be uploaded remotely.

Now a 13-year-old company, Smart Home Pro has succeeded by providing a combination of design expertise, a broad array of reliable products, and superior service.

“When someone builds their dream home, they deserve a system suited to their unique lifestyle, and we try to provide that,” Hatala says.

That philosophy has been a success, according to Rees. “We do about 90 percent of our business in new construction, so we’ve worked hard to build a strong reputation with the builders in our area,” he says. “If we can make their customers happy, we know we’ll be getting more calls in the future. And despite the economy and the housing market, business has been pretty steady in Sedona. So maybe we’ve been really lucky, or maybe we’re doing something right.” **SVC**

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COMING HOME TO WINDOWS HOME SERVER

By Eric B. Rux

In July, Microsoft announced the availability of Windows Home Server (WHS) Power Pack 1. This long-awaited service pack finally fixes the dreaded data-corruption problem that has plagued WHS's reputation since its discovery in late December 2007. Every time I would talk to my technical friends and peers about WHS, all they wanted to talk about was the corruption problem. Now that it has been addressed, maybe we can put it behind us once and for all.

I never personally experienced the data-corruption problem, and from the reports I've seen, neither did a lot of other WHS users. With that in mind, I hope that this fix doesn't overshadow the cool features that Power Pack 1 adds to WHS. I'll talk about those features in greater detail in the months to come, but to whet your appetite, here's an overview of a few of them. ...

Read more at svconline.com/connectedhome/homeoffice/coming_home_part_8_731.

GET THE TV YOU NEED

By Jason Bovberg

A friend of mine is mulling an HDTV purchase. He has that common tech-guy gut instinct of wanting to buy the most impressive equipment on the market—within financial reason. For this purchase (which he appropriately deems the centerpiece of a new home-entertainment system), he wants to devote a good chunk of his budget and get the “very best.” Naturally, he has his sights fixed on 1080p. When he told me of these high-resolution intentions, I thought of his viewing habits and his viewing area, and I said, “Hold on, buddy.”

It goes without saying that 1080p is wonderful—in theory. If you've seen a demo of a 1080p HDTV displaying a true-HD source, you know what I'm talking about. Detail is more precise than anything you've ever seen (even in nature), color and black levels are vivid and rock-steady, and you just stand there willing to murder your mother in order to implement that technology in your home. ...

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