

Affordable A/V Control Systems

SpeakerCraft's EZ-Pad Solution

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Cost Of A/V Control Systems Now At An Affordable Price

During the mid 1960s, it became increasingly popular to put loudspeakers into secondary rooms, e.g. bedrooms, kitchens, and bathrooms. Since all of these rooms were still controlled by amplifiers located in the main room, you still had to run downstairs to change the audio selection—which by today's standard's, was a pain. So it was only natural that people started asking if they could select and control their music preferences from their remote room. And that's when it all started—the birth of whole-house audio control.

As many of us are aware, one of the first distributed audio control devices to be developed was the Infrared Repeating System. Coupled with a remote control, you could turn on the AM/FM receiver, change sources and control the volume. The IR Repeating System would simply send a command over a wire and then repeat the signal in the primary room, as if you were operating the system from the primary room. Now that was convenient!

But it gets better than that. Not only could the IR System control the audio components, but it also controlled the video components, such as a satellite system. In those days, 18-inch satellite dishes did not exist, only expensive C-band systems. Most homeowners could not afford a second unit, and that led to the increased demand for IR control.

The satellite industry and the audio industry, operating independently, created the demand for whole-house distributed audio and video control. An IR receiver was placed in the secondary room and an IR emitter was attached to the front of the A/V equipment. A homeowner could simply point at this IR receiver with their handheld remote, and "presto" they got the control they wanted.

But as soon as this system found its way into the custom installation market, the custom installer had to deal with the aesthetics

of these IR Repeating Systems which led to the development of smaller units concealed in a wall inside a normal electrical J-Box.

Whole-house audio/video control stayed in the format of IR control until the late 80s when the market demanded even more convenience. To the homeowner, constantly looking for the remote became an aggravating experience. So the custom installer realized that it would be even more convenient for their customer if they were able to install a simple keypad into the wall.

However, soon after these in-wall keypads were introduced, it became clear that there was one major downside to this convenience; these early keypad systems were priced too high for the average consumer.

There were a couple of reasons for this. First, the "brains" of the system, which stored the IR control codes and sent them to the A/V components, were built into each keypad, keeping the cost of the keypad electronics high. And second, each individual keypad had to be configured by the dealer, which added to the cost of installation.

Over the past ten years, the accumulation of technical capabilities and manufacturing efficiencies has given rise to a third generation of keypads. This new design is radically

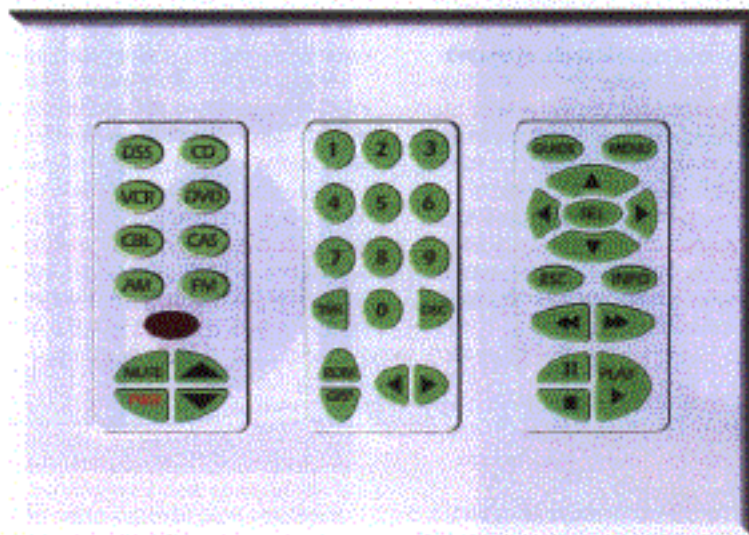
lower in price and therefore fits into the mainstream budget of consumers.

SpeakerCraft, a leading innovator of in-wall loudspeakers, recently announced the release of its revolutionary keypad. Calling this system the "EZ-Pad," SpeakerCraft has developed a format, which would allow the brains of the system to be placed in one central unit, instead of in each keypad.

According to Bill Cawfield, Vice President, E-Group for SpeakerCraft, this design significantly reduces the cost of the system, not only because it lessens the amount of the circuitry required, but it also eliminates the labor cost associated with configuring multiple keypads. Thus, as the number of keypads expands throughout the home, the overall cost of the system decreases per room.

In addition, says Cawfield, an extensive IR code library has been stored in the centralized brain, so that the installer simply accesses the codes needed. Contrary to this, the time involved for learning each individual IR was very labor intensive for many of the other keypad systems currently available on the market.

At the heart of the system is functional flexibility. Keys can be configured in the field to either be source selectable keys or



function keys. The system is easily expandable beyond the master keypad enclosed in a single gang J-box. The master keypad can select sources, control component features, repeat IR commands from the homeowner's remote, and turn systems ON or OFF. By adding a numeric keypad, and/or function keypad the system is easily expandable.

The EZ-Pad system not only incorporates the latest in power status management of source components, but also contains the majority of IR codes for discrete ON and OFF power commands. In addition, the system is not limited to IR controlled AV components. RS232 controlled equipment, such as lighting, can also be accessed. An RS-485 based communication protocol is used between keypads and the central controller.

Although the EZ keypads are simple in design with limited "brain power," they at least know who they are in the system because each one is addressable and they know what source was last selected. Similar to a computer and its keypad, the keypad sends instructions to the central control unit, which then drives the system.

Since SpeakerCraft designed its control system from scratch, they effectively were able to produce a product that utilized new technology and components. Some advances in technology that SpeakerCraft incorporated into its keypads include highly sophisticated membrane touch pads, which have become more reliable over recent years because of the increased use of cellular phones and their demand for reliable keypads. And finally, over the past several years, IR learning firmware and associated IC chip technology has also decreased in price. Combine all of this together and the result is a highly versatile system with increased reliability at a reduced price.

What's next for whole-house audio control? Well, according to Cawfield, the next wave of design is complete turnkey packages for the installer. Integrated pre-amps will be tied together with multiple power amps—all in one package. This will further reduce manufacturing and installation costs.

With that said, however, there are limitations to this turnkey system; the home must match the size of the system. If a home

needs more sources or zones, then this turnkey system actually gets more complicated and expensive. So there will always be a need for individual system components for the more sophisticated installations. Nevertheless, the trend is to offer complete turnkey systems that are simpler to install at less cost for the majority of audio distributed installations.

Within a short time, SpeakerCraft will be introducing a totally integrated keypad/pre-amp/amp system. However, this does not mean that they will abandon their discrete component system with individual multizone pre-amps and amplifiers. Different installation requirements demand different solutions.

But, as a homeowner myself, and knowing that money does not grow on trees, I see extensive logic to having one central brain control the entire system, which functions through a series of IR receivers and/or in-wall keypads located in remote rooms. So when my parents visit me at my house, they can listen to Lawrence Welk in the guest room, while I take refuge listening to Counting Crows in my bedroom. ■

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