

jeff's corner

Comings and Goings

Audio-Video Group is committed to providing our customers with top notch, well engineered systems using quality products and installed by some of the best technicians in the business. We invest heavily in continuing education for our employees to provide them with the latest skills, technology and knowledge to employ the best standards and practices for our projects.

To that end we are pleased to add two new members to our team: Frank "Rusty" Timberlake has twenty-six years of experience in the industry including live sound, system installation, I.T. skills and as a musician for worship teams. His principle function is as a lead technician for our install projects in Virginia; but don't be surprised to find him in Maryland, West Virginia and Pennsylvania as well. Rusty is scheduled to attend an upcoming Biamp Nexia training session in Portland, Oregon.



Rusty



Brian

We are also pleased to welcome aboard Brian Morgenthaler as an installation technician. Brian has been involved with Church sound since the sixth grade with McLean Bible Church. He has prior experience with large installations and also works with recording and production of musical acts in the region. Brian will be attending the International Communications Industries Association (ICIA) Academy this Fall to enhance his skill sets.

Dave Lightcap, who has been an engineer with the company since 2000, has gone into retirement. We are pleased that he has agreed to continue to work with us on an on-call basis to help support our growth.

And finally, Mark Dodson from our Virginia office has relocated with his family to the Charlottesville area. We will miss Mark and wish him continued success in his future endeavors.

Jeff Miller-operations

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A Quarterly Newsletter Dedicated to Audio & Video Issues for Houses of Worship in the Mid-Atlantic

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off the rack

Mixers - Digital or Analog?

These days every sound system designer is faced with an immediate decision. Will this system have a digital or analog mixing platform? For this edition, we will look at the advantages and disadvantages of the two choices.

What is a sound mixer?

A sound mixer is a device which takes two or more audio signals, mixes them together and provides one or more output signals. As well as combining signals, mixers allow you to adjust levels, enhance sound with equalization and effects, create monitor feeds, record various mixes, etc. Mixers come in a wide variety of sizes and designs, from small portable units to massive studio or live sound consoles. The term mixer can refer to any type of sound mixer; the terms sound desk and sound console refer to mixers which sit on a desk surface as in a studio setting. Every multi-input audio system contains a mixer of some type.

Analog mixers

An analog sound mixer is a device which receives the electrical signal created by a microphone at its input channel preamp. The channel preamp increases the electrical signal level. The signal then travels through the mixer channel, being equalized, affected and/or routed to the mixer output sections. Current analog mixer designs have a low noise floor (audible hiss sound heard through speakers) and have a mostly fixed, non-expandable architecture. Most analog mixers have no digital audio connection capabilities.

Digital mixers

A digital sound mixer is a device which receives the electrical signal created by a microphone, but immediately converts the analog signal to digital in the analog-to-digital (A/D) converter. The signal stays in the digital domain during its travel through the mixer. Level changes, EQ, and so on are done by digital signal processing rather than by analog circuits. Digital output signals from the mixer go through digital-to-analog (D/A) converters to return the signals to analog format.

Digital mixers are extremely clean from a signal to noise standpoint. Digital mixers have a mostly fixed, non-expandable architecture, but are usually configured with many more inputs and outputs than their analog counterparts.

Advantages

An analog mixer is at its base a simpler, lower cost solution. Users can view every knob and fader. Since most existing systems contain an analog audio mixer, mixer upgrades are possible without a complete audio system overhaul.

(Continued inside)



recent projects

Based on what you have seen in previous issues of our newsletter, you may be under the impression that all of our installations involve large, big budget projects. The fact is that we take just as much pride in providing our services to the smaller congregations who feel the need to provide quality systems as part of their ministry. Throughout the years, we have established procedures designed to result in well managed jobs with superior systems and happy customers. Each job must pass through Engineering, Sales Review, Procurement, Scheduling, Testing & Tuning, Training and final delivery of Schematic Diagrams and Owners Manuals.

Below are examples of two such systems which were recently completed and which were handled in exactly the same professional manner as we do all our projects, regardless of size.



A PTZ (Pan/Tilt/Zoom) Camera captures the activity at the Altar and sends the signal to the DVD recorder and monitor where the sound and video are recorded.

A Sanyo 3700 Lumen Widescreen Projector

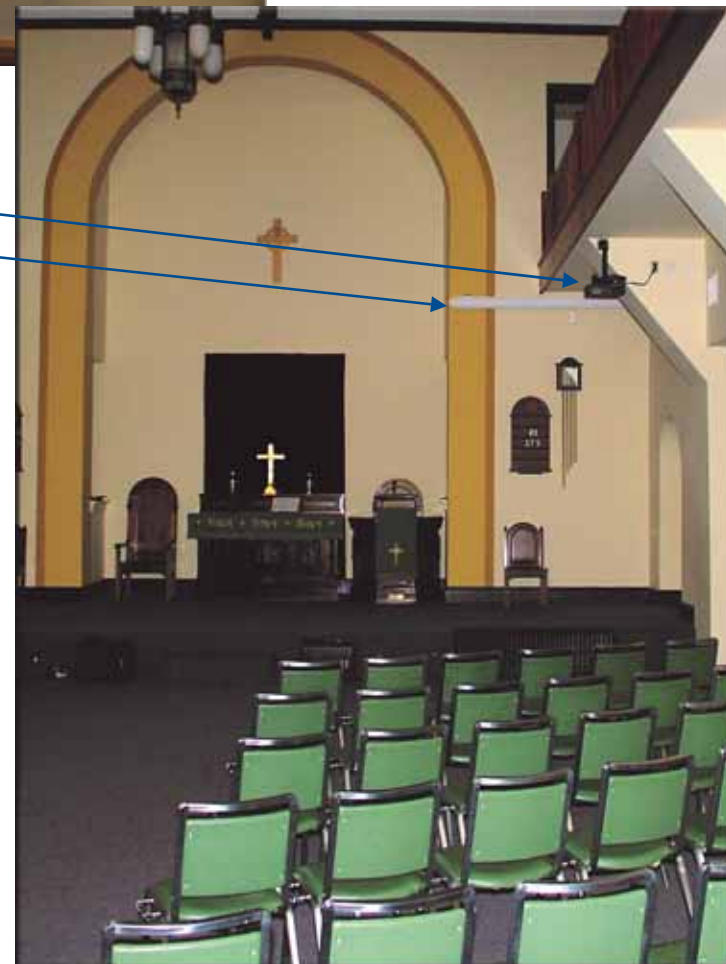
A 92" (16:9 format) retractable screen by Vutec deploys for use during the service

Christ Reformed United Church of Christ Middletown, MD

Typical of many congregations today, Pastor Mark Wakefield provides both traditional and contemporary services on Sundays and knew that adding video elements would augment his second service which is not held in the main sanctuary.

Audio-Video Group engineered a basic system which allows for an image from either a laptop computer or a DVD/VCR player to be projected onto a drop down screen. Audio from the video sources is patched into the existing sound system. This design allows for the playback of pre-recorded media and also display of Powerpoint® presentations or content (such as hymn lyrics) from worship software.

All cabling is concealed in the walls and all the sound and video components are secured in a portable rolling case which can be set up and connected via wall plates in a matter of minutes.



Mount Saint Mary's Practice Chapel, Emmitsburg, MD

This project involved converting a classroom into a small Chapel where young Seminarians can practice The Mass and record it to a disk which can then be submitted to the Monsignor for later review and comment.

A small camera was ceiling mounted towards the rear of the room and a boundary microphone was also ceiling mounted over the altar. Both signals are routed to the Monitor and DVD Recorder. The system is very simple to operate and requires minimal training.

off the rack (continued)

of volunteer tech staff is usually easier because analog mixers have a defined number of inputs and outputs. Audio purists prefer the analog sound as digital audio can lack the depth, energy and presence of its analog counterpart.

A digital mixer is quite simply a computer with some knobs and faders. Once the audio signal becomes digital, the options are seemingly endless. These systems usually include global channel patching with internal compressors, gates and numerous effects processing, either dedicated per channel or assignable. Tasks such as channel routing, signal splitting, digital recording, etc. are easily accomplished.

Most digital mixers also have automation capability. This automation or "flying faders" allows the mixer to 'remember' the last setting and recall exactly those parameters. The faders will automatically position themselves and the digital knob settings will reset to a previously stored position. Most digital mixers have multiple levels of access or security in the form of computer-style user names and passwords. Inexperienced users can operate the mixer without the fear of "messing something up" as limited access users are only permitted the required amount of control.

Disadvantages

While an analog mixer is simpler, expansion is not possible. Analog mixer purchasers need to plan for future needs and expansion, and purchase those future channels now. Buying a 24 channel mixer today may be affordable, but the minute that 25th input is needed, the entire mixer needs to be replaced with a larger size. Outboard equipment such as compressors are additional purchases and 16-24 channels of good quality audio compression can be quite costly, not to mention the many cables required to connect them. Analog mixers have no scene or parameter recall/restore. Over time as mixer channel adjustments are made again and again, the overall sound system quality appears to shift. About three or four times a year the console needs to be manually reset and returned to the proper tuning. This usually requires professional support such as Audio-Video Group to reset the system.

A digital mixer is initially more expensive and can be more difficult for less experienced users to learn and feel confident operating. Some sound techs prefer a specific analog outboard unit over the included digital mixer features. Many digital mixers do not provide a way to connect this outboard equipment. The automation and scene recall are very helpful, but sometimes new users rely on this automation to "mix the event" for them and they never seem to understand audio system operation beyond the limited access they have been given, thereby potentially limiting the development of good future sound technicians. Finally, the head end of a digital mixer is a computer. We all know what can happen to computers every now and again...painful death. Frankly, most digital mixers haven't been on the market long enough to know what their life span will be, when and how they fail, and what it will take to repair them.

And the winner is...

You all know there is no clear cut absolute winner here. My job is to help my customers make these choices. I have specified and sold more digital mixers in 2008 than I ever imagined and they are only gaining in popularity. One product I have used a number of times is the Roland V-Mix Digital Audio System. This product has all the digital console advantages, but is really easy to operate and the learning curve is not too steep. One feature that sets it apart from the competition is the Roland digital audio snake. The digital snake boxes go near the stage. These active snake units perform the A/D conversion. The digital audio is then connected to the mixing console via standard Cat5e cabling, greatly reducing cabling and associated installation costs. I recently specified the Roland V-Mix system for a portable church application because of the many included features and the very quick setup, which most portable churches require. It was a bit more than they had originally intended to spend, but the time savings and portability quickly more than offset the addition cost.

I hope this article was helpful to you as you think about upgrading or replacing your sound system. If you have questions or need addition resources concerning this or any other audiovisual need, I can be reached at chrisg@audiovideogroup.com or 866-999-5720.

Chris G.



Call us at 1-800-668-4988 or visit us on the web at www.audiovideogroup.com