Church Production

AN EDUCATIONAL MAGAZINE FOR HOUSES OF WORSHIP COVERING AUDIO, VIDEO AND LIGHTING TECHNOLOGIES

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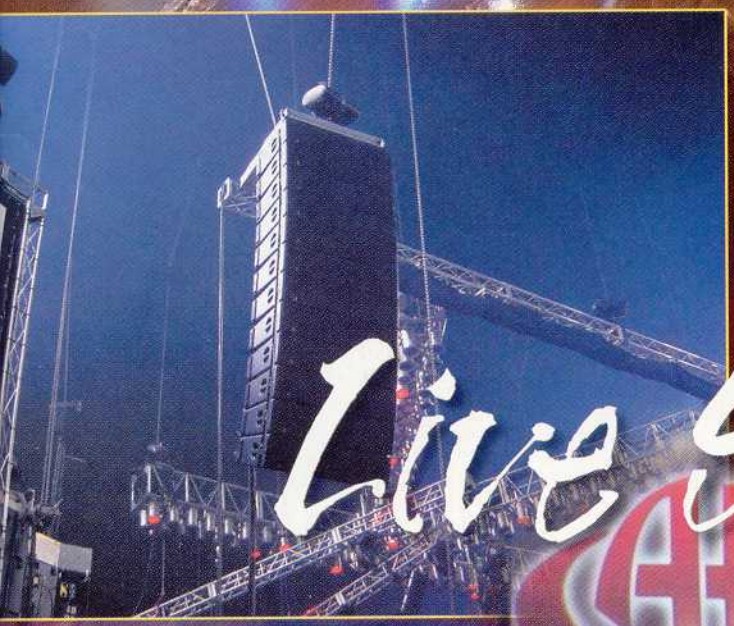

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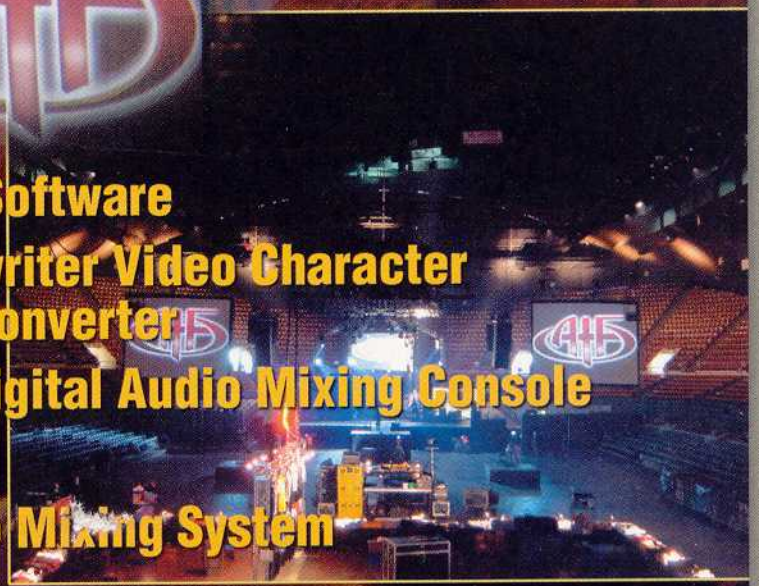

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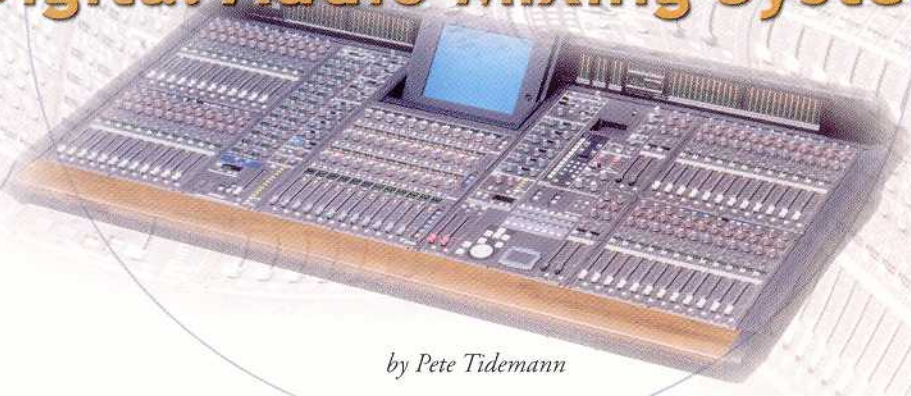
CPM REVIEWS:

Yamaha PM1D Digital Audio Mixing System



by Pete Tidemann

The best part about our world of technology is the choices that we have today. The analog mixing consoles in use today sound superb, however the up-and-coming digital realm of consoles has firmly caught the public eye. The Yamaha PM1D Digital Audio Mixing System was introduced just a few years ago at the Audio Engineering Society (AES) Show in New York. At the time, I was truly impressed with the functionality and arrangement of the desk. I did not have the chance to get my hands on one until recently when I visited the Metrodome in Minneapolis, Minnesota.

Configuring the Console

The Metrodome's house engineer, Jeff Pederson had given me a disk of the PM1D software ahead of time so I was able to set up my own console before arriving at the venue. This valuable capability could allow churches to configure the console offline for different services. Easter service with the extra choir members and orchestral instruments, or the Christmas program with several wireless lavalier mics could be saved in files simply recalled from the computer.

In fact, if you do not want to bring in an engineer for every event, you could set up the computer to run an automatic configuration for simple services. The computer could activate the inputs for altar, lectern, pulpit and choir and route the signal to an external automixer installed in your church. This would be an easy way to use the high-powered features of the desk and still maintain the simplicity of an automated system.

The console is made up of several pieces; the power supplies, the CS1D control surface, the DSP1D mix and processing engine, and the input and output cards. The DSP1D mix and processing engine distributes the audio signal through the input/output cards in the rack. Ethernet and 68-pin control cables connect the console to the engine with the rack located near the performance area.

This makes the CS1D control surface literally like a big mouse, just controlling the audio, with all the actual mixing and processing taking place in the rack on stage.

It is your choice to configure the inputs how you would want to have them. Several options are available depending on your primary use of the desk. The AI8-ML8 mic/line input "card", or what Yamaha calls a "cage", is for the majority of microphone inputs from the church. Line inputs, such as external effects or video inputs, are handled by the AI8-AD8 line input cage, and there is also a combo cage with four mic/line inputs and four line inputs available. The AO8-DA8 Line Output unit features all of the line outputs to send to the amplifiers, external matrix or record decks.

The last card is the Digital I/O DI08 unit used to accommodate up to 8 mini-YGDAI (Yamaha General Digital Audio Interface) that can route audio through AES/EBU, Tascam, or ADAT

format digital systems. It is your choice that dictates how many channels you would like to have and whether you want to record digitally to ADAT or Tascam systems.

The Control Surface

The control surface is well laid out, with four banks of twelve inputs for a total of 48 inputs visible at any time. With the flip of the layer switch, you access another 48 channels, if your version of the board has the 96-input configuration. Each of these inputs has a traditional-looking fader that you can grab whenever you need to. This 100-mm fader is fully motorized and moves with the different scenes or mixes you can program to be recalled during the event. You can easily see what the signal level is on each channel via the six-segment LED meter above each fader. At the top of the console are 48 assignable level meters that correspond to the 24 mix busses, while the second set of 24 meters can monitor the other mix busses or the 24 channel matrix section.

Above each fader is the electronic read out for labeling each channel (drums, bass etc), as well as a "select" button to activate the virtual channel strip to the left of the center section. This virtual channel strip is where you adjust the "onboard" EQ, noise gate, compressor, delay, gain and attenuation as well as 12 DCA assignments. Instead of the VCA (Voltage Control Amplifier) found in analog consoles, it is the DCA (Digital Control Amplifier) to which each channel can be assigned. The phantom power (+48V), phase reverse, and insert switches are also located in the strip.

This virtual fader also controls routing to stereo busses, matrix section and auxiliary/group busses. This virtual strip is as simple to use as any analog desk I have ever mixed on, even though every input channel has it's own dynamics and EQ section.

The inputs on the desk can be assigned to a multitude of mix outputs. There are 48 mix busses to choose from. These can be linked to form stereo busses where one knob becomes the level control and the other becomes the pan control. The PM1D also has 24 matrix mixes to derive outputs as well as Stereo A and B outputs on the back of the control surface. Each output has the same parametric EQ (6-bands) and variable knee compression as the inputs but you also have twenty four 31-band graphic EQ's to assign to the mix outputs. Once again, no racks of external equalizers and delay are needed. It even has a spectrum analyzer readout to monitor the RTA response in the room.

Effects

Despite having eight onboard effects processors, the desk is quite easy to get around, I didn't have to reference the manual very often and everything was at the touch of my fingers. I didn't have to scroll through confusing menus or dig deep to find the parameters of the various functions. I have found some digital consoles daunting for live use because of the pages of menus to access the functions. The PM1D places it all at your disposal and there is a knob for every function that you need to mix on the desk. All it takes is hitting the select button by each channel.

Scenes and Memories

The console has a total of 990 scenes that you can set up on the desk. Additional scenes are available using the PCMCIA card slot to the right of the LCD screen. These scenes automate the desk and make the faders fly when you change. I used this to setup a couple of different scenes for my event at the Metrodome, one for my band/entertainment and the other for the spoken word portion of my event. When I changed bands, I just dialed up the next scene and the mix for the next band dialed up in a heartbeat. I was excited that I no longer had to document all of my settings while someone else mixed on my desk!

The most daunting piece of the console is really grasping how the initial setup works and understanding the patch in and out of the system. Like lighting consoles, the Yamaha PM1D has a "soft" patch in the routing internally. This means that each channel has to be assigned to all of the outputs and faders that you want to control the signals. This process can be shortened by using the convenient library of presets that Yamaha has put together. There are onboard libraries for patches, EQ's, compressors, gates, delay, name and effects. You also can add your own configuration library presets for future use.

For saving the presets and configuration of the desk, different levels of security can be implemented. For example, a guest sound engineer can only save or edit the parameters related to their portion of the console without affecting the overall setup.

Using this console is very similar to using an analog desk and is unlikely to confuse those of you who are used to mixing in the analog domain.

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