



Once Upon A Time

The evolution of digital consoles

By Andrew "Fletch" Fletcher

I remember the first time I used a digital console for a live show, a corporate event that was taking place on an airfield in the California desert. I was mixing in a tent with the "talking heads" on lavalier microphones, standing in front of a parabolic set, and rented air conditioning units giving off about 90 dB of noise.

Outside, professional drivers were racing the cars of the company putting on the show. A tight corner on the track sat right outside my tent, and the screech of tires at the mix

position was deafening.

The console was a Yamaha O1V. I'd never used it before and had about 15 minutes to learn before rehearsals. Somehow, I managed to get through the show.

After that experience, I quite liked the idea of a digital console. The ability to set up cues had made mixing the show very easy, and even if the console didn't sound exactly as I was used to, it was very convenient. The onboard dynamics were a bonus.

So I ordered an O1V for my next corporate show; unfortunately, it had some "problems" during rehearsals so I went back to analog. A couple of years passed before I would turn to a digital console again.

From those early days with the O1V and the O2R (which I still use on *American Idol* to this day), the next time I got behind a digital board was with the U.S. introduction of the first InnovaSON model. The "French Console" – as we called it back then – was pretty remarkable.

It marked the first time I'd seen a large-format digital console built for the live market: 48 inputs (great!); 23 outputs (what am I going to do with all of those?); gates and compressors on every input (this could lead to trouble); compact stage box connecting to your local rack via two coax cables. ("Who are these people at InnovaSON and why haven't we heard of them before?")

Live Sound - ProSoundWeb Poll

My view of digital consoles:

I'm totally sold!

17.77%

O.K. for certain applications

15.26%

Analog and digital con./will co-exist

50.99%

Still not comfortable but keeping an open mind

9.34%

No way, analog rules!

6.64%

Polling period: 11/03/04 - 12/14/04. To participate in ISI/PSW polls, go to www.prosoundweb.com.



I started working with an InnovaSON Sensory and was very impressed. Once you figured out the quirks, it was very easy to get around and store cues on. Others seemed impressed too, with Sensory desks showing up on a few tours.

Around that time, Soundcraft came out with the Broadway, a digital control surface that would control analog input and output racks, Celine Dion toured with one, but then we didn't hear much more about the Broadway.

I think it was an LDI show, can't remember where or when, and for some odd reason I strayed onto the Vari-Lite booth to look at some nodding buckets. Over in a corner was Howard Page of Showco sitting in front of a sleek looking thing with faders on it.

A bit later, Harrison, who manufactured the Show Console for Showco, would offer a version for sale at about \$500,000 – a bit much to pay for a thing that's going to bounce around in a truck most of the time.

But the Show Console became very popular with Showco, and after the merger, with Clair Bros. Still, the execution racks wouldn't travel too well, and cards had to be re-seated when the console got to a show. Also, the rotary encoders on the surface would sometimes catch fire, although they would still work afterward.

SPEAK TO NO ONE

Various people I knew in the industry were claiming to have been flown to Japan, taken into a small room and made to play around on some kind of

apart from a CD player (and still is, to this day).

We used the PM1D at the Grammy Awards show the following year. Instead of having to constantly reset consoles by hand, as in the past, I could now hit recall and announce to the rest of the audio crew who hadn't even begun to strike the last band that I was ready to line check the next one.

If I still smoked, I would have had time for a cigarette outside the venue and still be back in plenty of time for the next line check. Life was good. Unfortunately I no longer smoke, so I ended up having to listen to award acceptance speeches, which are mind numbingly boring at best.

So here we are, in the present day, and there are many great large-format

We were shown a product that had been well laid out, with an easily understandable work surface

Fletch: "Hi Howard, why are you sitting in a lighting booth?"

Howard: "I'm showing our new mixing console, the signal stays in the analog domain and is controlled digitally from this surface."

Fletch: "What the (expletive deleted)!!?"

Howard: "Would you like a run-through?"

I was thoroughly impressed by the ergonomics and audio quality of what Howard was calling the Show Console – it was well thought out and easy to use.

Fletch: "How much?"

Howard: "We're not selling them. You have to rent them from Showco."

Fletch: "I see."

prototype digital mixer. Having done this, they were required to come up with suggestions for improvements, promise to speak with no one regarding this matter and were put on a plane home.

Yamaha was working on something big and digital, and they took their time with it. When they finally finished, we had the PM1D.

I was lucky enough to be at the first training seminar given on the "1D," which was attended by all of the Yamaha dealers who were going to distribute the product. We were shown a product that had been well laid out, with an easily understandable work surface, configurable input and output hardware, 96 inputs and 48 outputs (need more now please), great internal dynamics and effects, all at a price range that was affordable.

The digital console had come of age, and would be the only piece of equipment I would need at FOH

digital consoles on offer from the likes of Yamaha, DiGiCo and InnovaSON, along with a slew of smaller format ones from many other manufactures.

We also have the console from Digidesign, which no doubt will offer plug-ins for dynamics and effects, build your own virtual insert and effects racks. SSL is rumored to be building a console for live sound applications (it'll need to be able to be bounced around on a truck day after day and still work at the show) and other studio stalwarts such as Euphonix and Studer are evolving their digital consoles toward the live market.

The digital console train has taken me for a heck of a ride to this point, and it's fascinating to think of where it will end up. ■

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REAL WORLD



DIGITAL CONSOLES HAVE ARRIVED

Mark Herman

The future is now. Sales of large-format digital consoles are rising as more manufacturers, models (and new features) take hold. Analog is far from gone, but if the current crop of models is any indication, expect digital to dominate at most/all price points in the next few years.

Arguments about sonic quality and reliability are finally starting to crumble. Except to the analog purists and really tweaky pros, high-end digital consoles sound very good. The average audio person finds it difficult to determine significant sonic differences between the current models.

We always hear rumors about how a particular model screwed up and ruined a show, that it's unreliable and so on. In reality, 98 percent of the rumors you hear about consoles are rubbish.

Yes, there have been a few documented acts of major digital crash and burn. But guess what? They all happened with first production-run consoles, and the problems have been addressed. It simply isn't the case anymore, with established models running stable software and redundant hardware. And, each new version of software adds more versatility, reflecting end-user input – and costs nothing!

It's quite possible that some of the "new kids on the digital console block" will experience problems, but this is the way with new technologies. At one time or another, almost all analog console manufacturers had power supply, connector, pot, fader and capacitor problems with new models.

One thing to be aware of when comparing the different models in the listings I've prepared that follow: on the surface (and in print) they may seem similar, but this is far from the reality. Frankly, all of the feature sets are so extensive that literally hundreds of pages would be needed to list everything that these digital consoles offer.

So, what I've done is point out what I see as the most important features, and where applicable, put them in context. End users were also forthcoming with their experiences, and their comments are reflected.

The following listings should only be the beginning. The manufacturers provide good information on their web sites, and I strongly suggest doing your own detailed homework – in addition to getting as many hands-on demonstrations of as many models as possible.

Mackie TT24

www.mackie.com

When I first saw the prototype TT24 and got an understanding of its features and ease of use, I knew this digital console has a chance to dominate in its price point. Once you get your head around to the fact that it does really take only a maximum of two separate touches to a given point of control, this console can quickly become your friend. And in general, lots of features for a great price say plenty.

The TT24 (TT stands for "two touch") is a 56 by 45, 24-bit digital mixer (also 96 kHz capable) with 100 mm motorized faders, onboard analog and digital I/O, full channel metering, digital recall, EQ, dynamics, and effects. The rear panel is equipped with all of the necessary I/O to take full advantage of the board's functionality.

All 24 mic inputs have four-band parametric EQ, comp/limiter and gate available, and the eight line inputs

have the four-band parametric EQ as well. A unique feature called Flex Groups consists of eight groups individually configurable as mono, stereo or VCA-style groups with dedicated group faders. These can be tailored for the application – traditional analog-style mono groups, stereo groups

Group faders become Aux Send masters. Matrix Plus is another unique feature, allowing the patching of any source into the Matrix for additional submixes.

The included TT Control software can be used with a laptop or desktop PC connected via a single USB cable. The software provides a large, full-color view of the TT24 touchscreen, with a higher contrast scheme implemented to help overcome daylight usage problems.

Reliability and the quality of the sound are unknown at this time because the TT24 began shipping in limited quantities to key accounts in late 2004.

Mackie is currently working to insure that the final quality control process is up to standard. Expect full production by late February or early March.

U.S. List Pricing: \$7,199



on a single fader or VCA groups.

Using Aux mode, the TT24 can be turned into a monitor console with a single button press. (The only blue button on the entire board.) In Aux mode, the TT24 channel faders become Aux Send levels, while



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Yamaha PM D Series & Smaller Models

www.yamaha.com/proaudio

PM1D: This was the first truly successful large format live console. With nearly 500 units sold worldwide, there is a sizeable core user group. It's popular in fixed installations and for live awards shows. The PM1D is very reliable and offers a 48-fader interface work surface and user configurable hardware. Configurable in 48- and 96-channel versions, it offers 48 mix buses, 24 matrices, 12 DCAs, 28-bit and 27-bit A/D conversion and 32-bit internal processing. If more channels are required, a second digital engine may be added. Monitor engineers working with IEM like the large number of outputs.

U.S. List Pricing: CS1D Control Surface – \$66,000; DSP1D DSP unit with 48 mono and four stereo channel capability – \$17,400; DSP1D-EX DSP unit with 96 mono and four stereo channel capability – \$19,500. (Other accessories, including digital I/O and peripherals available at additional cost.)

PM5D: The company's latest large-format model is intended for fixed or mobile live applications that require quality audio and complete recall, but where budgetary limitations may be a consideration. The "one box" design includes the mix engine, offering 64 input channels (48 mono plus four stereo analog inputs, four internal stereo returns) of 96-kHz audio and 32-bit internal processing. Two front-end configurations are available. Model PM5D includes 48 XLR analog mono inputs with manual mic preamps based on the circuitry found in the Yamaha DM2000, each with balanced TRS insert I/Os and with

an additional four stereo line level inputs. Model PM5D-RH includes 48 XLR analog mono inputs with recallable mic preamps, derived from the head amplifier design of the Yamaha PM5000 analog console, and with four stereo inputs that will accept mic level signal. Patching is painless and traditional copper snake systems will work seamlessly. This is a package that makes it easy for reluctant buyers to jump from analog into digital without being staggered by the layout or price.

U.S. List Pricing: PM5D – \$48,900; PM5D-RH – \$65,900

DM2000: Perhaps not classified as a "true" live console in the strictest sense, but the market is saying otherwise. This multi-platform mixing system provides 96 channels of dynamic control, 24-bit/96-kHz audio, a multitude of effects (also 96 kHz) and outputs, and utilizes DSP7 LSIs with 32-bit internal processing. A 22 by 8 (four stereo) matrix system provides cue monitor mixes or zone level control for sound reinforcement applications. The patching system enables 24 buses (eight record/subgroup busses, 12 Aux sends, Left/Right stereo bus and Solo stereo buses to be assignable to any output connector. The DM2000 also offers surround production facilities, integrated DAW and machine control, computer and memory-card based data management, flexible bus system with digital patching and 100mm motorized faders. Certainly quite worthy as a lower price-point option.

U.S. List Pricing: \$18,600

O1V96: For small-to-medium applications and built into the same footprint as the original O1V, with new computer and ADAT interfaces. The rack-mountable O1V96 offers 40 simultaneous mixing channels with full-resolution 24-bit/96-kHz audio, a range of stereo effects with 32-bit internal processing and full automation. Control surface, large display screen and user interface allow analog-style operation, with eight user-defined keys supplied for assignable functions. Version 2 software upgrade now available. Very attractive price point.

U.S. List Pricing: \$2,499

O2R96: Has more than five times the processing power of the original O2R and is used for various production and live applications, with 96 kHz audio, surround monitoring, studio manager software and DAW control. The 24 precision 100-millimeter motorized channel faders can be instantaneously layer-switched to control any of 56 channels. Also included are onboard effects and snapshot recall. Version 2 upgrades available for System and Studio Manager software.

U.S. List Pricing: \$10,299





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InnovaSON Sy Series

www.innovason.com

This France-based manufacturer (now owned by Digigram) originally came out with the InnovaSON Essential, Grand Live and Compact digital models about five years ago. While the earliest of these units were a tad “buggy” (and the market somewhat leery of a company no one really knew), they were fairly easy to use.

But give InnovaSON its just due for living on the “bleeding edge” to push the live market forward, and note that the evolution of digital technology combined with the company’s experience and user feedback has resulted in the respected Sy Series.

The current models – Sy80 and Sy48 – offer a unique feature set that let the user design the fader layout based on need. Sensoft control software is employed to decide “which faders do what” in performing any of the following functions: XFAD, input, output, aux, group, matrix, VCA, crossfade or monitoring.

In other words, the faders can be

set up in any configuration the user wants extremely flexible and a powerful design option for applications that require simple-to-understand, competitively-priced and flexible digital console.

The concept behind XFAD technology: allow the user to choose which inputs are priorities and require immediate accessibility, without requiring a layer or bank. Groups of inputs can be submixed under a single fader and then appear in a fader “bank” on the control surface that is determined (again, by the user) via the software. This “bank” can be comprised of any number of faders and is hosted in the area in which all XFAD submixes appear.

For example, a “bank” of four faders could represent the submix of toms, a Leslie organ, or four choir mics. What would normally use 12 faders instead requires only seven.



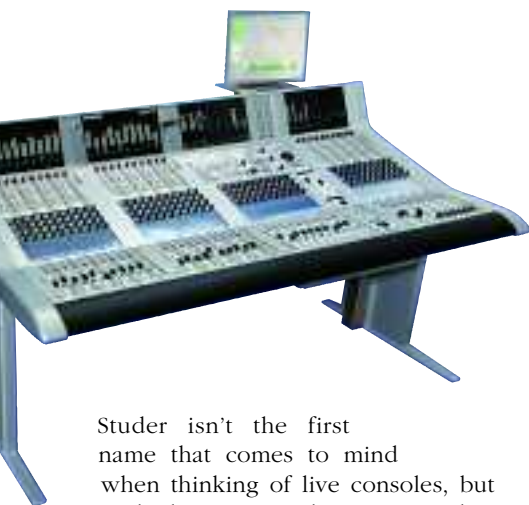
Sy48 and Sy80 operate on the same software, and the systems are completely modular in terms of I/O and options; the primary difference between the two systems: Sy48 is available with up to 64 inputs and 32 buses, while the Sy80 handles 80 inputs and 48 buses.

From the outset, InnovaSON digital consoles have proven especially popular in church installations, and we’re also seeing more of them going out on the road. With good reason.

U.S. List Pricing: Complete systems start at \$56,993. InnovaSON is distributed in the U.S. by Sennheiser Electronic Corp.

Studer Vista 8

www.studer.ch



Studer isn’t the first name that comes to mind when thinking of live consoles, but with the Vista 8, the company has developed a feature set that works for fixed live installations.

The Vista 8 takes a different path from the digital norm in that it provides channel strips with all switching, EQ, dynamics, panning and routing above each fader. Each fader bay is configurable with the ability to put

inputs or outputs on any fader.

The center control section displays all outputs in configurable banks and also contains the VCAs. The Contribution button above each master fader pulls all of the inputs assigned to that fader up to the rotary encoders in the control section, allowing the user to see the send levels from each input.

Easy-to-read graphics around the rotary encoders show the current function as well as the value of the encoder. The channel strip operating concept means that learning the console is quick and intuitive.

Static automation includes a graphical snapshot preview, cue list management with crossfade as well as MIDI support. This means that snapshot recalls can send MIDI commands to control external equipment or incoming MIDI commands can be used to fire cues. Snapshot filters and masks can be easily generated and

edited using the console controls and not via central screen selection.

The Vista 8 can be specified in terms of the number of faders, I/O and channels, including up to 32 hierarchical VCAs and 16 Mute Groups. A remote bay option is available, allowing either a single or a number of bays to be mounted in a portable housing with a single fiber connection between the remote bay and main desk.

Ergonomically it exudes a warm and comfortable feel. Studer has placed about 10 units in large live installations around the world, grabbing a “beachhead” in the world of sound reinforcement. I wouldn’t be surprised if fellow Harman company Soundcraft adopts some of the advanced Vista 8 technology and design in the future.

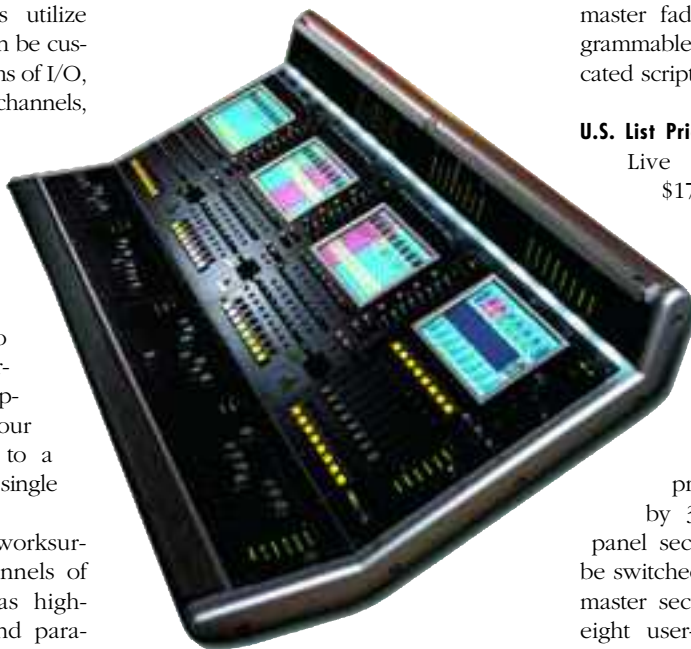
U.S. List Pricing: Ranges from \$150,000 to \$400,000, depending on desk size, I/O and DSP.

All DiGiCo console versions utilize touchscreen technology and can be customized (and expanded) in terms of I/O, processing power for extra channels, EFX and even system EQ, compression and delay. I/O racks are compatible between all products, as are the session files. Companion DigiRacks (9U each) provide up to 56 inputs and 56 outputs, with up to two PSUs for redundancy and current sharing. (They are hot swappable as well.) Up to four DigiRacks can be connected to a console via coaxial cable or a single fiber connection.

Both the D5 and D1 have worksurfaces offering up to 160 channels of processing. Each channel has high- and low-pass filters, four-band parametric EQ, 240 milliseconds of delay, full-function compressor and noise gate (with the addition of available side chain EQ). EFX are insertable at any point. There are six slots, with reverb, as well as other EFX and output processing for up to 7.1 surround or up to 12 1/3-octave graphic EQs. Depending on model, 16 or 24 insertable processing channels (IPCs) have a six-band fully parametric EQ, with each band being individually switchable, and providing compressor/limiter and up to 510 milliseconds of delay.

D5 Live: Proven to be extremely popular with touring companies and engineers since its introduction a couple of years ago, who tell us it's easy to learn and use, and "feels good." Having four touchscreens always available allows for full command during a live show. I once watched a mid-level engineer with no more than 10 minutes of casual training on a D5 Live dive in and do a show with no problem. Impressive. New software upgrades have all but eliminated any technical issues that some of the earliest (2002) models encountered.

The D5 Live EX package provides



a choice of 56 or 112 mic/line inputs on stage, as well as worksurfaces, flight case, 40 analog I/O and 16 AES EBU I/O, local DiGiRack, 56-input, 8-output stage DiGiRack and a drum of fibre optic cable. The 112 EX version includes a second 56-input, 8-output-stage DiGiRack and a fiber optic connection between the two DiGiRacks.

The model D5T is intended specifically for theatre-type applications, high-

master fader controls and eight programmable macro buttons and a dedicated script space.

U.S. List Pricing: Varies by version; D5 Live 56EX system package – \$175,874

D1 Live: Just released in late 2004, the D1 Live is the "little brother" to the D5. A key selling point is its scalability, invaluable to buyers wanting to upgrade in the future. The small footprint worksurface is 44 inches by 32 inches, with two input panel sections, allowing channels to be switched in banks of eight and one master section, with eight faders and eight user-assignable macro buttons. All processing and PSU are in the worksurface. Standard are 64 channels, 40 buses, 16 control groups, effects, one dual MADI card (allowing two DiGiRacks to be connected with up to 112 inputs and 112 outputs) and one PSU.

Several variations of the D1 are available to meet a wide range of more specialized needs.

U.S. List Pricing: Varies by version; D1 Live 48DP system package – \$85,000



lighted by the D5-RC remote control, a compact operator's console. For more complex shows, the D5-TC Theatre Masters Controller provides extended



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Level Control Systems CueConsole

www.lcsaudio.com

CueConsole from Canada-based Level Control Systems (LCS) is a work surface that is part of a modular system consisting of the Matrix3 engine and four control modules – Meters, Faders, Transporter, and Editor. These can be configured in any way desired and for any size of application.

Because of the modular architecture, only the modules necessary for a given application must be purchased, and additional modules can be added as needed. Modules communicate with Matrix3 frames via Ethernet, and can be located at multiple locations in a venue.

Automation provides the ability to perform a one button capture of all controls, with individual wait and fade time settings for each fader, pan pot,

and matrix point. The system is scalable and can support up to 280 inputs and 512 outputs. Each input and output channel has



up to eight bands of full parametric EQ, up to 1.3 seconds of delay, and dynamics processing with an expander and compressor. The system has 256 buses and a 256 by 512 matrix that is controlled by the Space Map multi-channel pan-

ner that is standard with every LCS system.

LCS has had success in the theatrical market and select high-end installations. The actual CueConsole is really just part of an integrated package that also works very well with the unique VRAS loudspeaker management system. These products are well done and worth a good look for those in the upper level installation market.

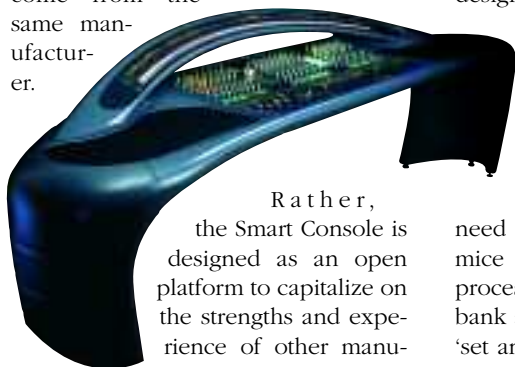
U.S. List Pricing: Entry level for CueConsole is about \$30,000 (16 by 8, one Fader module, control computer and software). Typical configurations range from about \$65,000 (32 by 16, Faders, Meters and Transporter modules) to \$200,000 (128 by 64, three Faders, two Meters, one Transporter and Editor module).

Smart AV - Smart Console

www.smartav.net

A first look at the Smart Console brings to mind the deck of the Starship Enterprise. The physical arc spanning above is equipped with touch-sensitive strips that enable operators to rapidly locate and easily access channels without use of multi-function controls or computer menus. Wave your hand and viola! Pretty wild.

From Australia-based Smart AV, the Smart Console has been in the design phase for 15 years and has started to ship. Smart AV challenges one of the industry norms: the control surface and processing engine, which together make a mixing console, should come from the same manufacturer.



Rather, the Smart Console is designed as an open platform to capitalize on the strengths and experience of other manu-

facturers. As such it's available for use with the following mixing engines: Logic Pro 6 from Apple (formerly emagic); VADIS System from KLOTZ Digital; Pyramix Virtual Studio from Merging Technology; DME64N and DME24N from Yamaha; and Series 5 from SADIe, including PCM-H64.

Live audio follows behind post-production and recording as target-markets, but it's quite possibly a product that high-end event installations may consider. VADIS is currently the mixing engine of choice for live use due to its stability.

This is the first audio console design that both reduces the number of knobs on a panel and reduces the number of actions required to access out of reach controls, while allowing the user to remain in the central mix position at all times. ARC technology eliminates the need for menus, computer screens, mice and keyboards in the mixing process as well as reducing the use of bank and function switching to all but 'set and forget' functions.

There are three frame sizes providing ARCs for 48, 72 and 96 channels. Channel strips are arranged in blocks of eight; the 72 and 96 channel control surfaces can be fitted with up to 24 channel strips, the 48 channel version with 8 or 16. An optional Post Panel provides a 12-inch TFT display, 95 user-programmable buttons and a jog wheel. The largest configuration is not limited to 96 channels, because the console can bank switch in lots of channels according to the size of the ARC – up to a theoretical maximum of 9,216 channels.

It's too early to tell how the Smart Console will play out in the sound reinforcement world. However, it's a product with strong magnetic attraction. It seems logical that within a few years, the idea of separating surface and engine may seem natural. As in most cases, the market will decide; regardless, it's quite interesting.

U.S. List Pricing: About \$50,000 to \$150,000; engine not included. U.S. distributor is Audio Toys Inc. (ATI), www.audiotoys.com.

Recording heavyweight Digidesign has entered the live market with the new Venue digital system, consisting of a D-Show worksurface and a stage rack containing mic preamps and converters. It supports up to 96 inputs and outputs. The stage rack is connected to the FOH rack via a digital snake using standard co-axial video cable. The FOH rack contains the DSP mix engine and an embedded computer.

Each section of the system is scalable; the stage rack I/O can be expanded (or contracted) in increments of 8 inputs or outputs. The FOH rack comes standard with local I/O and two DSP cards. It can be expanded by adding optional I/O and up to three more DSP cards (for a total of five). The control surface consists of a main section with eight input faders, EQ control, dynamics control, sub groups, VCA and output faders, along with a 'side car' containing 16 additional input faders. Up to three sidecars may be utilized for a total of 56 input faders.

One of the most notable features of the Venue is that it shares the ability of Digidesign's Pro Tools recording systems to run TDM plug-ins. Such plug-ins consist of EFX emula-



tors from Digidesign and from third parties such as Focusrite, Drawmer, Massenberg, and others. Plug-ins can be inserted on any input or output reducing the reliance on traditional hardware-based outboard EFX gear. A single plug-in, such as a reverb or compressor, can be reiterated on as many channels as desired, each with its own unique controls and settings. The Venue console interfaces with Pro Tools via a FireWire or TDM interface. FireWire allows 18 tracks to be brought in while simultaneously recording 18 outputs to Pro Tools LE. The TDM interface can capture all 96 stage inputs directly to a Pro Tools HD system for subsequent mixing, sweetening and delivery either via Internet uplink or conventional physical mediums.

Another fascinating (and somewhat frightening) feature is the Personal-Q section with outboard PQ controllers; these small, portable control boxes are used on stage to give the performers management of their own monitor mixes. Up to eight PQ controllers may be used with a single Venue system, and in the event of difficulty, the engineer can take control from the artists, even locking out the PQ controllers from further use, if conditions warrant. Although this sounds good in theory, I can't help but think that ego-driven artists will crank it to "11" if given half a chance. Of course, this is not a big problem with IEM, but monitor wedge feedback can happen faster than the operator's override. If you have the artist under control, great – and yes, there is a limiter.

Digidesign's concept for the Venue is more far reaching than just mixing audio. Their vision includes incorporating fully integrated audio, lighting, video and more into one control system package. While this may seem outlandish now, future generations may look back and consider Digidesign to be a pioneer of digital amalgamation.

U.S. List Pricing: \$62,000

And Another Thing (Or Two)...

Late last year, we received very brief news from Midas regarding their ongoing work in developing a digital console platform. Of course this is of much interest given the tradition and reputation of Midas on the analog side of things.

As of press time, the information we have is that work continues on several fronts, with some parts having reached the testing stage. Robbie McGrath, noted for his live engineering work with The Rolling Stones, has been one of the partners with Midas on the evaluation effort, and he reports that a thorough check of the new console's EQ section went quite well.

"I tested this EQ to within an inch of its life, and I can say quite categorically that it's the closest thing I have ever heard to an analog EQ, in particular a Midas analog EQ," McGrath states. "I won't say it's AS good as an XL4 EQ, but within a gnat's whisker."

Work continues, and we'll provide more information as soon as it becomes available.

We would also be remiss not to point out the Euphonix System 5-B, a high-end digital live and broadcast console specifically configured for live and live-to-tape production. These have proven a choice in upper echelon performing arts facilities, and all reports have been satisfactory.

The System 5-B is comprised of a control surface, digital processing core, digital and analog interfaces, and a system management software application called eMix. It offers full support for 24-bit I/O and internal processing at 40-bit floating point, with 96 kHz sample rate operation available.

Of note: every channel on the System 5-B has exactly the same features. In addition, monitor channels, input channels, effects returns all include the same number of buses and Aux sends, EQ, filters, and dynamics which helps to simplify routing and operation. Full dynamic automation is included together with recall of all console parameters. There's a lot more information at www.euphonix.com.