Recording the Gig

By Bill**Evans**

Have you ever promised to take on a task that you thought would be easy and simple only to find — after the promise has been made — that the task is not only NOT simple, but it is so complex that it is pretty much impossible to do it with any sort of completeness? Welcome to my world.

When I decided to do a Buyers Guide on ways to record gigs, I was thinking about the increasing number of touring acts and houses of worship that record gigs for release — often the same day — as part of their basic business model. I knew a few people doing it and their methods appeared to fall into using one of two or three available systems out there. It is hard for me to imagine being more wrong.

So instead of the handy dandy chart, we are going to look at a few ways to get the job done a few of the popular tools for doing it. For our purposes this time, we are NOT going to cover the plethora of hand-held digital recorders out there. These devices include the Sony PCM-D50 (which I use), the Zoom Hr4 and the Tascam DR-2d.

(Need to get me hands on that last one. It offers a unique "backup" recording at a level up to 12dB lower than the "main" file or the ability to use the line inputs and the built-in mics at the same time, giving you a board recording and a room recording that you can mix together later using any DAW). F●H

Next Rung, Please...

Moving up the food chain, there is an entire class of small mixing consoles with built-in FireWire interfaces that can interface directly with a laptop running a DAW. These are limited to 16 channels by the FireWire protocol. There are a bunch of these and we are not even going to try to list them all but here are three of our faves.

Allen & Heath Zed R16

More of a recording board that has the features you need for small live gigs, the Zed R16's claim to fame is its true dual use. Use it to mix the gig and output to a laptop via FireWire or to a stand-alone recorder over the built-in ADAP Lightpipe interface or use them both at the same time. The R16 also doubles as a MIDI controller when it comes time to mix those live tracks.
FireWire is compatible with any ASIO-compliant DAW (basically anything except Pro Tools.)
MSRP: $3,499; Street: $1,999.

Mackie Onyx 1640i

Feels more like a live board with 16 XLR inputs, four submix groups, six aux sends and four-band EQ. And the routing is crazy cool. You can send to FireWire as any combination of direct channel sends, aux sends, submixes or main L-R output. I did a small gig with one of these a couple of years ago and was doing the live mix, sending 12 channels of audio data to my laptop plus using the DAW plugin for reverb. Also of note: The Onyx-i Series really laid the ground for breaking out of the Pro Tools hardware cage. It was the first non-Avid piece of gear that could talk directly to Pro Tools and methinks a significant part of the decision to remove the Avid hardware requirement from the recently release Pro Tools 9.
MSRP: $2,199; Street: $1,499

PreSonus StudioLive

PreSonus' 16-channel StudioLive 16.4.2 ($1,999.95) and 24-channel StudioLive 24.4.2 ($3,299.95) digital mixers integrate tightly with software. StudioLive's integrated FireWire interface works with any ASIO- or Core Audio-compliant DAW, and the mixer comes with PreSonus' Studio One Artist DAW, Capture live-recording software and Virtual StudioLive mixer-control software for Mac and Windows. We haven't tested this, but PreSonus says that latency is low enough to use software plugins for real-time processing.

Capture is designed for StudioLive, so mixer channels are pre-assigned to software tracks. Recording is "set and forget." Drop markers on the fly and export each region as a song. Users can open Capture files in Studio One Artist for editing or export the tracks as WAV files.

StudioLive mixers include extensive onboard processing, and you can record each channel and bus with or without processing. You can also chain two StudioLive 16.4.2s for a 32-channel console.
16.4.2: MSRP: $2,499; Street: $1,995.
24.4.2: MSRP: $3,999; Street: $3,299.

A La Carte Options

When we move into the world of digital mixers, things get interesting — and sticky — real quick-like. Every major digital console maker offers at least one, and usually several, options for talking to hardware or software multitrack recorders. Plus, you have options like the RME MADI cards that can take MADI output from any digital console and send up to 64 channels of audio to a desktop or even a laptop computer running a DAW and using the Express slot on a laptop or installing as a PCI card in a desktop machine.

Allen & Heath

The iLive-T system has a number of recording options:

1) Analog, the iLive-T system has 32 analog outputs that could be used as direct outputs or "submixes/stems" for recording. 64 inputs can be bused to balanced analog outputs for interfacing with a recording system like Pro Tools.

iLive Dante module

2) MADI Card in the iLive-T mix rack can handle 64 channels each way for integration with a MADI enabled recording system. MADI input and output jacks are duplicated for redundancy.

3) MMO Mini-multi Digital Output card in the iLive-T mix rack has three ADAT Lightpipe outputs for 24 channels of digital multitrack recording. These can be individual channels or submixes.

4) Ethersound, Dante, and RockNet cards also exist for the iLive-T mix rack that can be used for multitrack recording in Ethersound, Dante or RockNet-enabled recording systems.

5) Stereo recording direct from SPDIFF at the back of the iLive-T control surface. This output has its own dedicated mix bus.

DiGiCo

One of those who rely on a third-party interface, DiGiCo nevertheless offers a seamless solution at a very attractive price for live recording as well as virtual soundcheck in a very small package; i.e., no racks, no extra external engine, no reboot time.

Using an RME MADI-Face box ($1,600 street) and a portable Mac or PC with an Express port, you have a 56-track high-resolution multitrack recorder. You can use many software recording platforms including Logic, Nuendo, Cubase or REAPER. (*With the recent breaking of the Pro Tools "gotta have Avid hardware" requirement, you oughta be able to use PT as well. But this has yet to be tested. — Ed.*) If you need to record more than 56 tracks, use three RME PCI Express cards in a Mac or PC tower and now you have up to 168 tracks — all for under $8,000 for the tower software and the three RME cards.

With a touch of the "Listen to Copied" button on any DiGiCo console, it unplugs your MADI stage rack(s) and plugs your multitrack recording via MADI connections right back into the proper channels to either mix down or do a live virtual sound check.

Innovason

The Eclipse platform comes with M.A.R.S., a fully integrated 64-track recording/playback system with transport and timecode on the control surface. The system is networked via Ethersound. Recording software and on-board (64 engine) effects are provided by VB-Audio. A DAW may receive the removable SATA hard disc (Wave files) for post production. 1TB = 16Hrs of 64Trk audio. The console may play back the multitrack for instant sound check of the PA or Mix, and the "Broadway" feature allows recorded tracks to accompany a live production within the same mix. The console and recording PCs may serve as backup to each other.

Eclipse is capable of mixing 104 inputs across 48 buses live. While I/O is fully scalable, the standard package comes with a Stage Rack, 64 mic pre's and 24 fully signal-processed outputs (analog, AES, ADAT). 16x16 more line I/O is accessed at the back of the console, and a 16x2 Aviom interface is available as well as MADI conversion.

Midas

For Midas PRO Series and XL-8, there are a number of recording options.

1) DN 9696. This is an integrated stand-alone disks on-board digital recording system capable of recording and monitoring 96 channels via direct AES 50 link to the PRO Series or XL-8 consoles. Broadcast Wave files can then be transferred to computer via Firewire, USB, or ESATA.

Midas DN 9696

2) Analog. DN-431 can be integrated into the PRO Series or XL-8 consoles to provide 24 analog transformer isolated outputs for integration into any recording system. Multiple units can be stacked to provide more recording channels.

3) The DN-9650 will be able to translate between AES 50 and a number of different formats including MADI, Dante, CobraNet, and Ethersound via cards. These were shown at InfoComm and should be available on the market soon.
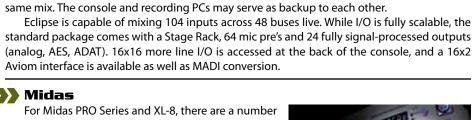
Roland

Roland uses its own REAC (Roland Ethernet Audio Communication) digital audio transport protocol for the transmission of audio over a single Cat5e cable. Roland's Live Recording solution is integrated fully with the V-Mixer Digital Consoles, and Digital Snake Systems by using the Windows based Sonar REAC Recording System or by using the built-in USB stereo .wav recording feature found on the M-400, M-380 and M-300 V-Mixer consoles.

The Sonar REAC Recording System, when used in conjunction with the V-Mixing System, or Digital Snakes enable users to record up to 40 channels of audio from their Digital Snake or V-Mixer System directly into Sonar using a single Cat5e cable. There are no additional hardware requirements for live capture — simply plug in the Ethernet cable into a gigabit port on a PC running Sonar.
Sonar REAC Recording Option: $1,028.

Roland V-mixer M-400

Yamaha Commercial Audio Systems
AuviTran Network ASIO Streamer

With the release of version 3.5 firmware this winter, the Yamaha M7CL-48ES console will be able to utilize the AuviTran Network ASIO Streamer that will give users the ability to digitally record and play back 48 channels of audio by connecting a Windows-based computer running Nuendo or similar DAW to the console with a single Cat5e Ethernet cable. The computer will connect to the console on the built-in Ethersound interface's third port. The ASIO Streamer is available free of charge and downloadable at yamahaca.com.

Dante MY16-AUD Card

Yamaha PM5D, DSP5D, M7CL, LS9, DM2000, DM1000, 02R96, and 01V96 consoles equipped with a Dante MY16-AUD card combined with the Dante Virtual Soundcard software allows 16 channels of recording directly to a Mac or PC via a single Cat5e cable. For recording more than 16 channels, add additional MY16-AUD cards. For this application, a switch must be used and then the cards each plug into the switch and the switch plugs into the Ethernet port on the computer. The Dante MY16-AUD has an MSRP of $649.

Seamless Mixing/Recording

Finally, we come to the class in which the mixing and recording systems are so tightly integrated that the process is seamless. There are actually even mid-market and high-end systems that all fall into this class.

Avid VENUE

While options including FireWire and MADI are available, the VENUE system can tie very tightly into Pro Tools via a simple Ethernet connection. The number of channels available ranges from as few as 18 using FireWire (Pro Tools) to as many as 128 using DigiLink (Pro Tools HD) or MADI (Pro Tools HD, other DAWs).

Avid Pro Tools

In terms of extra hardware needed and cost, users will need a Mac or Windows computer, storage media and interface cards for the console and computer. The total price will vary, depending on configuration, with an approximate range between $1,500 to $15,000.

As far as I/O connections are concerned, VENUE systems connect directly to recording systems via FireWire, DigiLink (Pro Tools HD) or MADI interface cards, with no additional preamps or converters required. VENUE Link Ethernet connection between VENUE and Pro Tools allows automatic session creation and cue list synchronization.

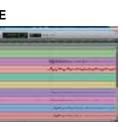The software platforms for recorded tracks include Pro Tools, if connecting via FireWire or DigiLink, and any supported DAW if connecting via MADI, using a suitable MADI peripheral.

Pro Tools software is included with each interface card or option card.

RML Labs

The Software Audio Console (SAC) system has been generating quite a buzz in live audio circles. What many do not know is that Bob Lentini also created the Software Audio

Workstation (SAW) recording platform, and that the two can work together with no additional hardware at all.

A SAC and SAWStudio rig is a very powerful and easy way to record live shows.

SAWStudio can do it on its own, but you need almost the exact same kind of hardware for either, so SAC can be added into the loop for about $500.

A SAC or SAWStudio system would consist of a PC Computer or PC Laptop connected to a soundcard and mic/pre converters that contain the number of channels of hardware you desire.

Software Audio Console (SAC)

If SAC is being used on this system as the actual mixing console for FOH or Monitors, the SAWStudio software can be run in the background and connect internally with no extra splitters or hardware to do a live multitrack recording of every live input in SAC.

SAC can mix the live show with no interference of the live multitrack recording. Later, SAW-Studio can be used to edit and overdub and mix the performance into a live CD project, or the files themselves can be easily lifted and imported into any other DAW system for completion.