

## Improved Cue Mixing in the Studio

Pro16 System Saves Time, Yields Better Tracks

Aviom's Pro16® Monitor Mixing System brings similar benefits to the recording studio as it does to live performance. By shifting some control of cue mixes from engineers to performers, Aviom's system helps musicians play better and frees up engineers to focus on what everyone wants them to focus on: making great recordings.

Clearly everyone's attention during a session should be on creating great music and getting it down on disk or tape. Performers don't want to be distracted by bad cue mixes, and engineers want to be able to concentrate on getting the tracks down and making them sound their best. And no one wants to pay for the studio time wasted in constantly tweaking headphone cue mixes.

### PERSONAL CONTROL, CUSTOM MIXES

With the Pro16 Monitor Mixing System, performers can set their own cue mixes and make adjustments as often as they want—without interfering with any other cue mixes and without distracting an engineer from the recording process. From the musicians' perspective, the A-16II Personal Mixer is easy to use and intuitive, so performers will be able to get control of their mixes quickly and independently—without the need for a lot of technical support or tutoring from the engineering staff.

The result is that musicians and engineers alike are able to concentrate on their real jobs: playing and recording. With the cue mixes out of the way, sessions run more smoothly and yield better recordings.



*Using the A-16II Personal Mixer from Aviom, performers can adjust their own cue mixes and engineers can focus on recording. Each mixer provides full stereo control of 16 channels of control, as well as save locations for 16 mix snapshots.*

### SYSTEM OVERVIEW

The Pro16 Monitor Mixing System begins with an A-Net® input module, which converts up to 16 analog inputs to 24-bit, 48kHz digital. Aviom offers several models of Pro16 input modules: the AN-16/i for line-level only, the AN-16/i-M for mic- and line-level, as well as console cards for direct output from certain Yamaha® and third-party digital consoles. A single input module can supply audio to as many Pro16 Personal Mixers as desired. All audio is distributed in real time (less than one millisecond from analog in to analog out) over Cat-5e cables, with up to 150m/500' between devices. The system supports both star and daisy chain topologies, or any combination of the two. Headphones are connected directly to the mixers.

The Pro16 system is modular and infinitely expandable, so your cue mix setup can easily adapt to your changing needs from session to session. Simply by adding or subtracting mixers, you can accommodate everything from a solo songwriter or jazz trio to a full symphony orchestra. Unlike with a traditional recording console, there is no limit to the number of independent mixes the Pro16 system can support.

### SYSTEM CONNECTIONS

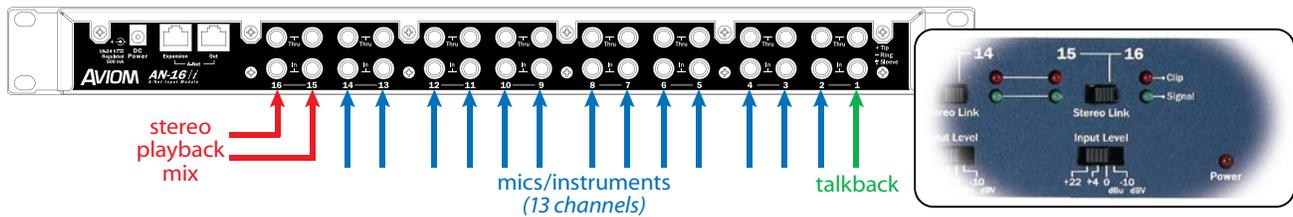
The system is connected in the studio in basically the same manner as in live use. Any channels that you want available for mixing should be connected to the input module. More information on these connections can be found in other Application Notes and the User's Manual for the input module or console card.



- ① Channel Selectors
- ② Recall/Group/Save
- ③ Pan/Stereo Spread
- ④ Channel Volume
- ⑤ Solo/Mute
- ⑥ Master Volume/Tone

**Figure 1.** Each A-16II provides volume and pan control for 16 channels, along with master volume and tone controls. Up to 16 mix Presets can be stored on each unit.

## Application Note



**Figure 2.** In this example, Channels 15 and 16 are reserved for distributing a playback mix to the monitor mixers. Channels 2-14 are used for creating custom cue mixes, while Channel 1 provides talkback from the Control Room. Note that Channels 15 and 16 are stereo-linked at the input module (inset), ensuring that the playback mix is delivered in stereo to each mixer.

There are a few important differences for studio setup, however. Studio performers often need to listen back to the tracks they have just recorded, through a stereo mix *prepared by an engineer*. Additionally, most engineers like to have a dedicated talkback channel from the control room to the performers.

To accomplish this, simply reserve two channels on the input module for a stereo playback mix and one for the control room talkback mic. This configuration will allow performers to customize their cue mix during a take but then listen to the recorded tracks during playback. Figure 2 illustrates this patching.

### PUTTING THE SYSTEM TO WORK

Because the Pro16 mixers can store up to sixteen mix presets, performers can shift back and forth between their custom mixes and the stereo playback mix from the engineer quickly and without erasing the custom mixes. Additionally, engineers can pre-load mixers with a variety of basic mixes, suited for specific tracking tasks (e.g., initial tracks, vocal overdubs, solos, etc.).

To do this, store a mix-and-talkback Preset in each mixer before the session starts. At each mixer, first mute all channels by pressing RECALL and then MUTE. Then set a comfortable vol-

ume for the mix channels (in the example in Figure 2, Channels 15 and 16) and the talkback channel (Channel 1). Remember to make sure that the stereo spread for the playback channels is set at full. Save this mix in a logical location (#16, for instance).

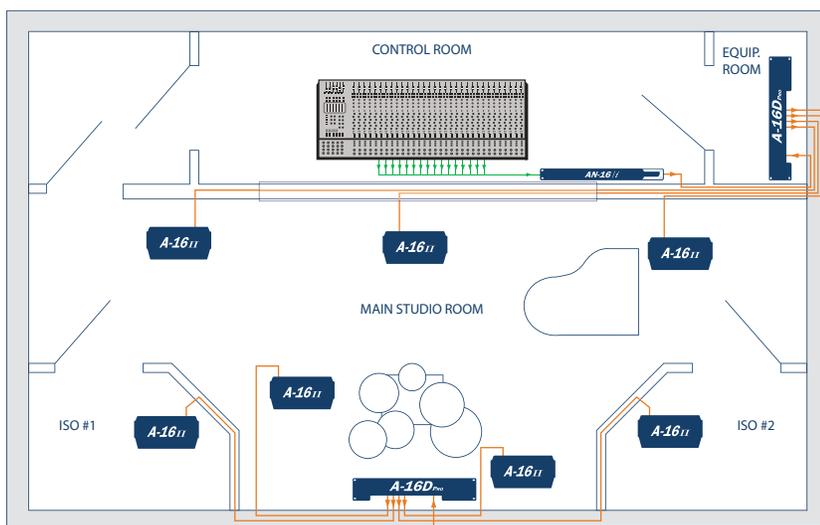
Preset	Description	Channel Levels
1	All muted	1-16 @ zero
2	Basic mix	15-16 @ zero; others set by engineer
3-15	User's custom mixes	15-16 @ zero; others set by user
16	Stereo playback mix	2-14 @ zero; others set by engineer/user

**Figure 3.** Sample preset list for a recording session, allowing performers to quickly switch mixes throughout the session.

If you'd like to provide the musicians with a basic cue mix to start from, set the thirteen mic/instrument channels at appropriate volume and pan levels. Add some of the talkback channel, and make sure the volume for the playback mix channels is set at zero. Save this mix in a second logical location (#2, for instance).

At the beginning of each session, make sure the mix channels are at zero before performers begin to make their cue mixes. Instruct each performer to save at least a basic mix they like (in Preset #3, for instance) before switching to the playback Preset (#16) to review a take. This will allow them to recall their custom mix when they're ready to do another take. With sixteen available Preset locations in each mixer, performers are able to store multiple custom mixes, tailored to different songs or different cueing needs.

Avid's Pro16 Monitor Mixing System gives musicians and engineers alike the freedom to focus on playing and recording, rather than on cue mixing.



**Figure 4.** An installation diagram showing a seven-mixer system incorporated into a studio. Mixers can be daisy-chained with power supplied locally, or connected to a Pro16 distributor, with power distributed on the same Cat-5e cable as the audio.