Talkback Refined

Coleman Audio TB4 DAW Talkback Monitor

by Frank Wells

Necessity is often said to be the mother of invention, and for the products manufactured by the audio design firm, Coleman Audio, the axiom rings true. Coleman's line of monitor switching, metering and other utility products are designed to supply uncompromising solutions where other products fail to give the user a complete production toolbox.

Studio talkback and control room monitor control are two such problem areas for a DAW-based studio. Often, a small-footprint

mixing console is grafted into the system to provide monitor control and other functions, a solution that is typically less than satisfying. Monitor input options are typically minimal in such desks. Talkback control has to be user-developed through use of the main console resources (resources not designed for the task). Quality of the signal path can also be an issue, and monitor control is not an area where you want to impose a quality-limiting bottleneck.

Coleman Audio's solution to the DAW user's talkback and monitoring control problems is the TB4. This 1RU device has a feature list that includes monitor level control, monitor input switching, alternate speaker feed switching, talkback functions and a headphone amplifier.

The monitor path through the TB4 is completely passive. Front-panel push buttons select between four balanced stereo inputs (on XLR). An additional push-button switch routes the selected input to one of a pair of balanced 2-channel outputs (also on XLR). For level control of the speaker feeds, all that a DAW user really needs in the monitor path is an attenuator. Rather than adding additional amplifier stages or other active gain control schemes, the level control in the TB4 is simply a bal-

anced, precision-tracking (spec'd to track within 0.05 dB) step attenuator (a multi-position switch tapping a ladder resistor network). That's all you get in the monitor circuits, but with modern sources and amplifiers (or powered speakers), that's all you need for flexible 2-channel monitoring. Without adding circuitry to the chain, the quality of the original source is maintained through the TB4.

On the talkback side of the equation, a pair of inputs are provided to bring a stereo cue mix into the TB4. Once inside the box, a talkback signal can be injected into the cue mix. A front-panel knob gives control over the level of the talkback signal, and another knob controls the level of the composite talkback/cue signal fed to the outputs. Presumably due at least in part to the monitor section I/O using up most of the rear-panel real estate of the TB4, the cue/aux inputs and outputs are on 1/4-inch TRS jacks. The balanced cue I/O and talkback summing use clean, time-tested designs built around 5532 dual op-amps fed by a linear bi-polar 15VDC power supply. The supplied talkback microphone plugs into the front of the TB4 using an 1/8th-inch jack. The mic is omnidirectional and very sensitive. It can be placed most anywhere the 12-foot attached cord will allow, and will still pick up anything in the room. Pressing the talkback switch on the front of the TB4 dims the control room monitor feed (by a fixed amount) and blends the control room microphone into the cue outputs.

Finally, the TB4 includes a headphone circuit that can monitor either the cue-input signal or the selected monitor output. The headphone jack and volume control are front-panel-mounted. The talkback signal does not appear in the headphone cue feed, and both the cue and monitor path feeds to the headphone selector switch are unaffected by their respective master-volume controls. The headphone amp uses an LA6210 amplifier stage, which gives it a quality akin to an amplifier stage built into a DAT recorder or the like. It gets plenty loud for most uses, though its primary function is expected to be as a quick check of the cue outputs. I tried several

sets of studio phones, nominally 50-60 ohms, and the headphone circuit drove them well beyond satisfying levels for me. With a dense mix as from a CD or mix bus, the amp did give up before my headphones did. My 600-ohm phones didn't fair as well, but again, you shouldn't be considering this headphone output the same way you would a signal that has to satisfy a drummer during tracking.

The TB4 is a relatively straightforward product to operate and comes with a minimalist manual (no schematics are included). A user who knows enough to know that the TB4 is needed should know how to operate it without any guidance.

The quality of the monitor path is, as described above, dependent on the quality of the input signal. Switching is silent and rotating the volume control step attenuator is also free of ticks or pops.

Although the cue and talkback circuits are active, they also do not compromise the input to the TB4, and the specs readily outpace the average small console. Talkback should be simple—push a button and speak—and the TB4 returns that level of practical simplicity to the process. Once set up, you simply press the talkback button and speak. You don't have to waste any of your attention thinking about whether you need to lower the control room monitor volume or to push up a console fader or un-mute a channel. If you want to locate the TB4 away from the operator position, Coleman Audio says the user can put a remote switch in parallel to the front-panel switch by soldering a pair of wires directly to the talkback switch. This lead could then be routed out the side of the chassis and to the location of the remote switch.

The TB4 is solidly constructed into a Middle Atlantic chassis. Premium connectors and components are used throughout. At $1,150, the TB4 may not be the least expensive solution to talkback and monitor routing for the DAW user, but honest value is given for the purchase price. Function has defined form, and the TB4 is well suited to effectively and simply address its assigned tasks, without compromise to signal flow or workflow.

Product information

TB4 DAW Talkback Monitor: $1,150
Coleman Audio
www.colemanaudio.com

The Drawing Board

Glenn Coleman, owner and design engineer for Coleman Audio, has a from-the-trenches view of professional audio. As a world-traveling MCI technician, as a freelance studio tech and as house tech for Atlantic Studios in New York City and later with Martin Audio, he cites his experience as "real life in the studio—what people need and what people want. Engineers would come into the shop, and they'd want a little foot switch for this or they'd want a pair of meters over there, some kind of switching device for the cassette room. There were a lot of little niche things that didn't seem to be something people sold."

Design and construction of custom solutions quickly became part of Coleman's repertoire. Approached by a retailer to build a set of stereo meters, the first Coleman Audio product sold through a distribution network was born. Cable testers and monitor switchers soon followed. "It grew from there," says Coleman. "I just kept listening to what people needed."

A request for a monitor switching box from NBC was the basis for what became the M3PH passive monitor switcher and level control. "Less is more is always my motto," Coleman notes. "With the gain that all this digital gear has, there was no way you'd want to add more level, so I looked for a passive attenuator." A high-quality, 4-gang, precision, stepped attenuator is at the heart of the M3PH, keeping the signal balanced while controlling output level. Selector switches route one of four inputs to one of three outputs. Coleman Audio's TB4 grew out of the M3PH, adding requested talkback capabilities, an active stage due to the summing now involved. Coleman says that with the addition of features like a control-room dimming feature and talkback mic switching—and keeping all the switching quiet—"it took me about two years to get the TB4 right." The TB4 feature set is more easily done inside a console, as the signals are there, "to grab," he explains, but when performing these functions outside a console, "you have to bring all those signals to the box."

Coleman Audio is a one-man company, but while Glenn Coleman juggles all the tasks required of a small businessman, he still finds time to develop new solutions for his customer's problems, oftentimes logical extensions of current products. For instance, Coleman Audio's the GT6 (the custom prototype built for Nickelback's guitarist) takes the passive switching techniques developed for the monitor boxes and allows a guitar player to switch between six wireless instrument sources, assigning the output to one or more of four amplifier feeds. As another example, NBC in Burbank has ordered a custom monitor box for summing multiple 2-channel sources without a mixer—eight tracks in, four bussed left and four to the right—with the ability to isolate tracks and featuring a mono switch, a volume pot and a headphone out. A prototype of the SS8 (Summing Switcher 8), now the next Coleman Audio product, will be shown at AES in NYC in October.