

C-ducer

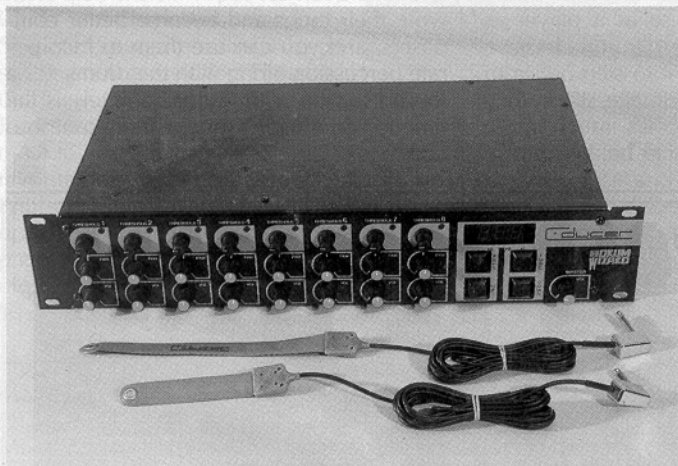


Photo by Rick Mattingly

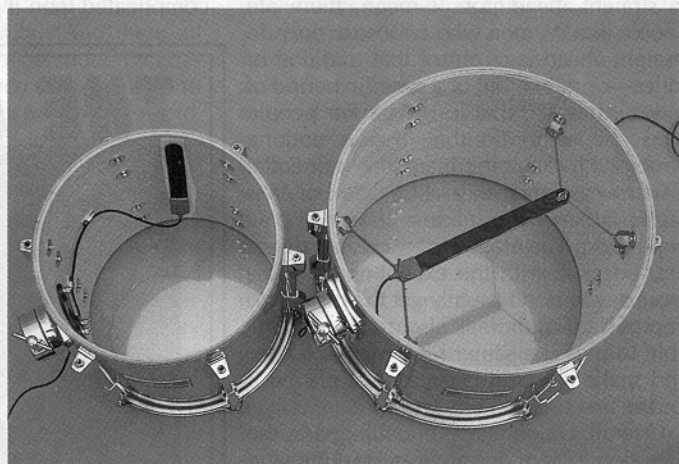


Photo by Rick Mattingly

The *Drum Wizard*, by C-T Audio Marketing, Inc., is a unique product that performs three independent tasks at the same time. The *Drum Wizard* serves triple duty by acting as microphones for your acoustic drumkit, triggers for pre-MIDI drum brains (such as those made by Simmons, Pearl, etc.), and accomplishing trigger-to-MIDI conversions (for drum machines, samplers, synths, etc.). It can be thought of as a link between traditional acoustic drums and the advancing technological worlds of recording studios and electronic instruments.

The *Drum Wizard* system consists of a set of eight *C-ducer* tape mic's (six are four inches and two are eight inches long), the main processor brain with a detachable power cord, and assorted hardware and other goodies used to attach the tapes to the drums. It comes with a short (but very well-written) manual and a video tape that further explains how the *Drum Wizard* is used and operated.

The *C-ducer* tape mic's are perhaps the most important aspect of the *Drum Wizard* system. These are actually capacitance transducers, which differ from conventional microphones because they sense mechanical vibrations internally rather than reacting to the vibrations in the air. Because these mic's aren't affected by normal sound waves, they are immune to feedback problems and have minimum "bleed through." The tapes are virtually indestructible and

have a frequency response of 20Hz to 22kHz rated at less than 0.05% distortion.

The main processor is a two-space rack-mountable unit. The bright orange lettering and graphic designs show up well against the black case. All the ports on the back of the brain are clearly labeled and grouped into four main sections.

The bottom of the back panel consists of eight jacks marked "C-ducer IN," along with eight professional-style XLR audio-out jacks. These are balanced, line-level outputs designed to feed the *C-ducer* signals to an external mixing board. It should be noted that the output levels of these jacks are factory adjusted and cannot be altered from the front panel.

In addition to the individual line-level outputs, a pair of stereo outputs is provided. These are 600-ohm balanced outputs (although using a standard quarter-inch "guitar cord" will unbalance them) that can be used to send the mixed signal of all eight *C-ducer* tapes to an amplifier. In order to get a mixed monophonic signal, it would be necessary to send all channels to the left side (for example) and use only the left mixed audio output to feed the amp.

By using this type of output system, the *Drum Wizard* is quite flexible in a live setting. The individual outputs can be used to feed a main mixing console for the house (leaving all the hard work to the sound technician) while the mixed audio outputs feed a stage amp or a monitor system.

There are four 5-pin DIN jacks in the back of the brain. Two MIDI-Out jacks send identical signals to any MIDI devices in your system. The theory behind providing two outputs is to avoid any delay that may be caused by "daisy-chaining" several MIDI sound generators. If you don't own a MIDI-Thru box, you can use these two MIDI-Outs as two separate (but identical) MIDI busses.


A jack for the Remote Access Pad (called RAP for short) lets the user plug an optional

foot-pedal system into the *Drum Wizard*. There are four different pedals contained in the RAP. Two are used for program increment and decrement and two are used to turn on or off the individual audio outputs or the MIDI outputs. During a live performance, these last two pedals can be used to adjust your amplified sound so that the audience hears only the MIDI sound generators, only the acoustic drums, or both at the same time—very flexible!

The final DIN plug included on the back panel is labeled "MIDI Cascade" and actually functions as a MIDI merge port. Signals coming into the machine by way of this port are merged with the signals generated by the *Drum Wizard* itself. The composite instructions are then sent to the MIDI-Out ports of the brain. Using the MIDI Cascade facility, it's easy to chain two *Drum Wizards* together or incorporate a multipad (like the *drumKAT*, *Octapad*, or *PortaKit*) with the *Wizard*.

The front panel of the *Drum Wizard* consists of eight input channels, a master volume control, and a programming section. Each of the eight channels has three knobs that control the threshold, pan, and volume of the signal from the *C-ducer* tapes. The pan and volume settings affect the mixed stereo outputs only, not the individual outs. The programming section is composed of only four buttons (with a center indentation so that they can easily be pushed with drumsticks). A bright, three-number LED is your window into the *Drum Wizard's* inner thoughts.

Interfacing the *Drum Wizard* to your acoustic drums can be accomplished in several ways. The tape mic's can be mounted inside each drumshell by attaching the tapes to little styrofoam wedges that are provided. The wedges are then mounted to the shell, about one-half inch from the batter head. Another method (suggested for



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Drum Wizard

by Norman Weinberg

larger drums) involves suspending the tapes under the head by means of strong rubber-band-like supports. The supports can be attached to the lug nuts inside the shell, or if you prefer, with a set of "p-clips" attached to the lug or to the shell itself. The mic' cable is then passed through the air hole in the drum and out to the brain. If you don't have eight drums in your kit, the remaining *C-ducer* tapes can be mounted directly on the outside of a rim (for triggering sounds with a rimshot), under a cymbal, or even around a cymbal stand—offering a few new triggering surfaces.

Some things need to be mentioned about the placement of the tape mic's. First, the position of the tapes is critical in determining the type of sound you will hear. Generally, as the tape is moved closer to the batter head, it picks up more of the "click" sound when the stick strikes the head. Moving the tape further from the batter head offers more resonance. In order to get a clean trigger, the manual suggests that you place the tape close to the head. You may want to experiment for a while before you decide upon a permanent position for the tapes. Because the tapes receive vibrations along their entire length, you can often get the best of both worlds by attaching them at an angle, with part of the tape next to the head and part deeper into the body of the drum.

The adhesive on the foam wedges and the p-clips is very strong and tends to leave residue on the shell when removed. I would recommend using duct tape to attach the mic's to the shell while you experiment with different positions. After you are satisfied with the locations, use the supplies provided with the *Drum Wizard* for more permanent installation. It's also important to use the clips to secure the cable to the inside of the shell. Since the tapes are susceptible to mechanical vibrations, any drastic movement of the cable will result in unwanted sounds or triggers.

Speaking of permanent installation, an additional kit is available from C-T Audio that will connect the tape mic's to jacks mounted in the drum shell. Then, you only need to plug a cable from the drumshell to the *Drum Wizard's* brain.

Well, how does the *Drum Wizard* stack up as a microphone? I was impressed with the result. When comparing it to a moderately expensive (around \$150) dynamic mic', the *Wizard* won. By following the instructions and suggestions of the manual and video tape, I was able to get a more natural sound faster with the *Wizard* than with the microphone. The *Drum Wizard* delivered a full tone, plenty of resonance,

and a good solid attack. It's going to take a while to get all your drums wired up and ready to use, but it will be time well spent.

When using the MIDI features, you first tell the *Drum Wizard* what type of drum is connected into each channel. There are five different settings, from small toms to snare drums to bass drums. (I assume that there are some internal electronics that optimize each channel for the type of signal it is going to receive.) After adjusting the trigger threshold, each drum can then be set to fire any MIDI note number over any MIDI channel. In addition, you can set the note's length in five-millisecond increments from 5 milliseconds to 1.5 seconds

may get a few false triggers. There is a special "rejection mode" that can be used to eliminate any triggering problems. By increasing the value of this function, you make the drum less sensitive to outside interference. At first, playing very loudly on my floor tom would cause a soft trigger on my snare drum and one of my mounted toms. After adjusting the amount of rejection on those two drums, the problem was eliminated. To the *Drum Wizard's* credit, adding the proper amount of rejection didn't degrade the snare's dynamic sensitivity too much. I was still able to trigger MIDI sounds with all but the very softest strokes (much softer than I would normally play during a

Photo by Rick Martingly



(handy when using the *Drum Wizard* to fire synth sounds). Once you've settled on the notes, channels, and duration, you can save your program to any of 99 different locations. Even though there are only four buttons involved with programming MIDI parameters, the unit is a piece of cake to adjust.

One of the nicest MIDI features is called "program pairing." Pairing allows you to layer a second MIDI program over the first, above any programmed threshold. In other words, play softly, and MIDI messages from the first program are sent; play loudly, and MIDI messages from the second program are added. This is an effective method for stacking sounds on top of each other, and by programming the threshold, you can adjust this feature to your playing style. My only regret is that paired programs must be adjacent to each other, and configured in an even/odd arrangement with the even-numbered program on the bottom. In other words, Program 0 can pair with Program 1, Program 2 with Program 3, etc. There is no way to pair two non-adjacent programs (such as 3 and 7, 22 and 38, etc.) or, for that matter, to pair adjacent programs that start with an odd-numbered program (such as 1 and 2, 17 and 18, 25 and 26, etc.). This limits what is an otherwise tremendously useful capability.

While the *C-ducer* tape mic's are immune to feedback, they are not immune to errant vibrations that may occur on your kit. If you knock a drum with your hand or if one drum is too close to another, you

live performance).

Overall, my impression of the *Drum Wizard* is very favorable. What could be improved? The knobs on the front panel of the *Wizard* feel a little flimsy. Not that they aren't high-quality components, but I like to sense some resistance when turning knobs—especially when adjusting something as critical as a threshold setting. The knobs on the unit I tested moved with the slightest touch.

Since the operating system of the *Drum Wizard* is software-based (upgrades can be done by swapping out one chip), I would like to see the ability to pair any two programs together. While I'm thinking of it, being able to connect programs together into chains would be nice. Other than that, I have no complaints with the *Wizard's* programming functions.

The *Drum Wizard* offers a super price-to-performance ratio. Eight mic's with a preamp and an eight-channel mixer, a trigger-to-trigger interface, and a trigger-to-MIDI interface could do the same job as the *Wizard*. However, I have doubts that they could do the job as well. Even though a dedicated trigger-to-MIDI interface or an eight-channel mixer would likely have more options and flexibility, the cost of all those individual components—not to mention the hassle in setting them up—makes the *Wizard*—at a retail price of \$1,495.00—a great value by comparison. If you trigger anything from your acoustic drums, give the *Drum Wizard* serious consideration.

