

Unlimited Versatility + Unbeatable Value



Eventide H949 Harmonizer®

No other digital special effects unit gives you the combination of versatility and value that you get with the Eventide H949 Harmonizer.® For example, true PITCH CHANGE. No ordinary digital delay or reverb can do it...no matter how elaborate its front panel appears to be. True pitch change is a standard feature of every Eventide Harmonizer—and, at a price that's at least \$3000 to \$4000 less than other comparable pitch change devices.

And you get so much more with the H949. Up to 400 ms. dual delay outputs, time reversal, flanging, repeat, randomized delay, dual feedback controls with equalization, remote and keyboard control capabilities. All standard. And all with Eventide quality.

Add it up for yourself. You'll see why more studios choose Eventide than any other digital effects. At any price.

Eventide
the next step

Harmonizer® is a registered trademark of Eventide Clockworks Inc.

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Ask Eventide:

Q: There are lots of digital delays around. Why is the Eventide H949 Harmonizer different?

A: Look closely at the H949's digital read-out. You'll notice that it's calibrated not in "delay" but in "PITCH RATIO." This symbolizes the unique features that set Eventide Harmonizers apart from ordinary "special effects" digital delay lines. Here's why:

Although "pitch ratio" is a mathematical concept, it has a very real meaning to the recording engineer. In effect, changing pitch is equivalent to retuning a musical instrument. This true pitch change, as produced by the H949 is far different from common ring modulator effects because Eventide Harmonizers preserve all harmonic ratios. As a result, even at wide pitch-change ratios, the modified signal still sounds musical. Pitch-changed signals can be mixed with the original to create chorus and harmony effects. You can change the perceived speed of a tape without changing the running time, or vice versa, and you can create continuous "doppler shift" effects (will that train whistle ever go by?)

True pitch change is also a far cry from the pseudo-pitch change which other digital delays obtain by changing the clock frequency. Any DDL can do this for a very short time (milliseconds at most.) But it does this at the expense of continued operation. For instance, raising pitch implies reading data out faster than they are read in. That's easy; just speed up the clock. Except that to maintain pitch, you have to keep doing it. The DDL quickly runs out of data and then where's your signal? Eventide Harmonizers contain circuitry to allow audio to be "read in" and "read out" at different rates. This provides the ability to set your output pitch up to an octave up or two octaves down with precision on the H949.

Q: What are glitches? How can I get rid of them?

A: If you followed the above answer, you'll realize that something must be done when reading data in and out at different rates, or there will be too much or too little data! What we do, in effect, is to "splice" literally removing or adding very short segments of program to make up for the missing or extra data. And, just as you would when splicing a tape, the Harmonizer makes a "diagonal cut."

While the diagonal cut eliminates sharp transients, it's still possible to get minor imperfections, known as "glitches" in the output. Depending upon the pitch ratio, the program material, and the prominence of the buried in the final mix (i.e. lead vocal or single horn) this "glitching" can range from objectionable to unnoticeable. Eventide's research has developed ways to substantially eliminate the pitch-change glitch. We do this by carefully selecting each "splice" point, much as a human tape editor tries to match the signal or silence before and after his cut. This important development (the "De-glitch card option") is now available on new H949 Harmonizers, and can be retrofitted to all H949's.

Got a question about digital effects? Write to "Ask Eventide" 265 West 54th Street New York, N.Y. 10019. Questions of general interest will be answered in this column. If we use your question, we'll send you an Eventide T-shirt, so include your size.