

PRO AUDIO REVIEW

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equipment
review

D. W. FEARN

VT-4 LC Equalizer

by Dr. Frederick J. Bashour

The equalization curves obtainable through the classic inductor/capacitor circuitry used in the old passive Pultec and Lang units have a special sound quality all their own, primarily because they are not "ideal" curves. This distinction has not been lost on modern manufacturers of pro audio equipment. Manley Labs and Tube-Tech have each introduced neo-Pultec equalizers.

Manley Labs owns the rights to the Pultec name and has produced several different models that faithfully copy the classic units' passive circuitry, while adding extra EQ points and additional bandwidth choices as well as Manley's own makeup gain tube amplifiers.

Doug Fearn, on the other hand, runs a company that manufactures just a few specialized tube products. Completely handmade, Fearn's creations roll off the assembly line at the rate of about six per month, and are gobbled up as fast as they are produced. Before introducing his



equalizer, it seems as though Doug Fearn waited patiently to see what every other manufacturer would do before concocting a unit that combines the best features of all the others.

Fearn also added his own special sonic circuitry and such custom touches as the same type of 1/4-inch aluminum front panel as used in the VT-1 and VT-2 mic preamps, finished with the same red DuPont IMRON paint found on classic motorcycles.

Features

The VT-4 (\$3,900) is a single-channel equalizer spaciouly built into a three-rack-space chassis that uses passive LC circuitry with Class A triode vacuum tube stages for its input and output amplifiers. Although employing four Svetlana 6N1P ultralow-noise triodes, the tube circuitry itself is largely derived from that which is used in the VT-1 and VT-2 mic preamps, ensuring a similar sonic quality. The sound is deep, resonant, present, smooth and creamy.

The input is line level, transformer balanced-bridging, but the tube input section has a stepped adjustable gain control that accommodates input signals as low as -10

dBm. The output stage uses the same custom Jensen transformer that is used in the mic preamps. The power transformer, and the inductors, are also by Jensen.

All controls are stepped for precise repeatability and uniform matching between units. The same high-caliber parts employed in Fearn's mic preamps are used here: silver contact

rotary switches, one percent metal film resistors, and polystyrene and polypropylene capacitors.

Here's a listing of all the VT-4's EQ points and their adjustable parameters:

Low-cut frequency adjustments are at 30, 40, 100 or 400 Hz; 0 to -18 dB shelving in 2 dB steps. Low-boost frequencies are 20, 40, 60 or 140 Hz; 0 to +12 dB shelving in 2 dB steps. Mid-cut frequency choices are 200, 300, 400, 500, 600 or 700 Hz; 0 to -18 dB in 2 dB steps. High frequencies can be boosted at 2, 3, 4, 5, 8, 10, 12 or 16 kHz; 0 to +14 dB in 2 dB steps, while highs can be cut at 1.7, 4, 10 or 28 kHz; 0 to -14 dB shelving in 2 dB steps.

There are five settings for high-frequency bandwidth (Q): 0.6, 0.8, 1.0, 1.4 or 1.7. Gain is adjustable in 3 dB steps from -9 to +9 dB. The balanced input and

At a Glance

Applications:

Studio and remote recording; mixing and mastering

Key Features:

Pultec-type LC passive equalization with an extended range of adjustment parameters; Class A triode vacuum tube electronics; stepped rotary switches

Price:

\$3,900

Contact:

D.W. Fearn at 610-793-2526;
www.dwfearn.com.

Completely
handmade, Doug
Fearn's creations roll
off the
assembly line at a
rate of six per
month.

output XLRs and I.E.C. power connector and its associated on-off toggle switch are on the rear panel.

In use

So, what does it sound like? Remarkably similar to Fearn's own VT-2! Throughout my listening tests, I auditioned solo instrument tracks (including piano, voice, violin, cello, oboe, bass clarinet and flute) and full mixes of my own classical productions as well as representative pop and jazz CDs.

The VT-4 is a special and unique equalizer. In most instances, its stepped switches made subtle, but noticeable changes which were extremely helpful as problem solvers and sonic enhancers. I very much enjoyed the ease of having a finite set of adjustable parameters again.

There's definitely something to be said for the ease and repeatability of stepped EQ switches — and not just for mastering purposes either. The controls all seem to be set up such that, as they are advanced further away from flat, the relative action between switch positions becomes greater in subjective effect — either sharper (Q-wise) or stronger, depending on the particular control.

It was helpful to have the subtle changes occurring in the +2 and +4 positions; sometimes all I ever want is just a smidgen of EQ modification. The VT-4 makes such adjustments easy.

I won't go into the wonderful EQ curves one can make by using the cut and boost controls simultaneously; if you use a Pultec-type equalizer, you'll know what I mean. I will single out, however, the 28 kHz cut-shelving control. I've never experienced this feature before, but immediately understood exactly what Doug Fearn meant when he wrote in the manual: "The highest frequency setting is particularly useful for digital recording. Attenuation in this range may help avoid effects common with anti-aliasing filters in A/D converters." Indeed, judicious use of this control makes very little apparent difference to the overall high end sound of the program material (and remember, I can still hear the 15.75 kHz local oscillator in beat-up old TV sets), but using it certainly makes a difference in the end result when one records using, say, the built-in converters in a DAT recorder.

I discovered this phenomenon about 15 years ago, when I first began using tube microphones on classical recording sessions. I learned that the typical ADCs of that era made mincemeat out of close-miked, spiky loud brass or high soprano vocal sounds, as picked up by typical solid-state microphones.

Darned if those old tube mics, on the other hand, didn't slow down the signal just enough so as not to completely freak out the converters. I concluded it had something to do with the converters' inability to sample spiky transient distortion products.

Now we have an equalizer with the ability to prepare bright, transient-rich program material for safe passage through the analog-to-digital conversion process.

I then made a subjective noise measurement — by cranking my monitor gain up all the way — and then switching back and forth between the Fearn box and various other level-matched pieces of tube and solid state line level gear in my studio. The VT-4 employs four 6N1Ps, an amazingly quiet new vacuum tube, with just a smidgen of extremely low level hiss, and no buzz at all. I've never encountered this tube before, but the bottom line is the Fearn unit was substantially quieter than any other tube equalizer I own; it might even be the quietest piece of tube gear in my control room!

In my reviews, I usually compare the sounds of competing units whenever I can. In this case, the closest equivalents to the D.W. Fearn VT-4 were the Manley mastering versions of its EQP-1A and Mid-Frequency Equalizers or, to a certain extent, the EQ section of the VoxBox. In fact, the VT-4 could be accurately characterized as competitive with all the Manley units combined; in other words, its circuit topology is based upon features taken from both standard and mid-frequency Pultec models.

First I listened to full mixes and compared the sound of the Manley and Fearn units as line amps with their EQ sections bypassed, to see if the sonic differences I'd noticed several years ago between the two companies' mic preamps were also present in their equalizers. The answer is yes. The largest difference between the Manley "sound" and the Fearn VT-4's sound was in the midrange and high-end

quality, although it was a bit difficult to qualify. The VT-4 sounded a bit more "real," while the Manley sounded more "high fidelity" on both mixes and individual instrument tracks. Fearn's lows sounded "plummier" and more resonant, while the Manleys were tighter and a little deeper.

I could usually make the Fearn and my Manley boxes equalize my various sound sources in a similar manner (at least to the extent to which their respective adjustable parameters were similar), but the overall character of their sound quality remained. I could always tell which unit I was using. On some sources I preferred the EQ effect from the Manley, while on others I preferred the Fearn's.

Summary

I highly recommend this unit. If you want an easy-to-use equalizer in the classic style, which does its thing smoothly and sounds luscious and creamy, the VT-4 is for you. Its price may seem to be a little on the high side at first glance, but once you realize that this handmade box does the work of both standard and mid-frequency equalizers — and as a whole lot more — the cost makes perfect sense.

Dr. Fred Bashour is a jazz pianist, church organist, classical music producer/engineer, intermittent college professor, consultant to university music libraries on the digital storage of course listening materials and a Pro Audio Review contributor.

Product Points

D.W. Fearn VT-4 LC Equalizer

Plus

- Luscious sound
- Quiet and dependable operation
- EQ bands from both standard and midrange classic passive models

Minus

- High price
- Single-channel only

The Score

One of the best modern adaptations of passive circuitry.