MIX
Professional Audio and Music Production

API 5500 Dual Equalizer

FIELD TEST

by Barry Rudolph

Back To The Home Page

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You Are Here: www.barryrudolph.com > mix > api5500.html

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The musical-sounding API 5500 Dual Equalizer embodies more than 40 years of tradition, beginning with the original 550 console equalizer module designed by Automated Processes Inc. founder Saul Walker. An industry first in the 1960's and the same as it ever was, the original 550's proportional Q filter design with reciprocal boost and cut is used.

Proportional Q means the filter's Q increases or sharpens with concomitant increases in boost or cut settings. Proportional Q makes the equalizer subtle at lower boost/cuts for program equalization and more aggressive at higher values--better suited for surgical shaping of individual tracks. Reciprocal means that any boost or cut made with the (repeatable) detented controls during a recording can be precisely 'undone' by an exact opposite setting on playback.

It's through this design and the sound the all-discrete Class AB 2520 amplifier that API products have achieved a nearly sacrosanct if not mythical status amongst audio engineers. It's no wonder that API is not interested in changing the basic circuit design and protects quality and component choices religiously. The 5500 is as close to a pair of the original 550B modules as humanly possible.

DOUBLE YOUR PLEASURE

The 5500 has two 4-band API 550B equalizers mounted side-by-side in a single-rackspace, steel-and-aluminum case. Each of the four bands has seven frequency choices (28 total) spanning five octaves and up to +/-12 dB of maximum boost/cut in 2dB steps. After the +/-6dB position, the steps jump to 3dB for the +/-9 and 12dB positions. Both the low- and high-frequency bands are switchable from bell to 12dB/octave shelving

filters.

The new Range control broadens the 5500's utility to include mastering applications by changing the four bands' boost/cut steps from the original 2 dB into either 1dB or 0.5dB steps. These additional ranges are exactly like the 550 variants that were custom-built for mastering rooms: the API 550D with +/-1dB steps and the 550M with +/-0.5dB steps.

The internal hand-built construction is strictly pro with a linear power supply for the +/-16-volt rails, single-thick PC board, and positive-feeling rotary and military-grade pushbutton switches. No integrated circuits are used; gain comes from two hand-built 2520 operational amplifiers in each channel. The 5500's electronically balanced input is via a single 2510 op amp, while an API 2503 output transformer provides levels up to +30 dBm before clipping. If you prefer more "color" from iron, you can order an input transformer that provides true galvanic isolation from the outside world.

GET ON THE MIX BUS

In my first tests, I simultaneously fed audio from my Pro Tools HD rig to a pair of vintage 550Bs in a Lunch Box and the 5500. I listened to finished mixes, individual instruments and vocal tracks using two identical stereo buses in a pristine and well-maintained 1970s vintage API console. After calibrating the buses and units with test tones, I found the old 550B units to sound darker--even merely switched in with no boost/cut applied. This overall darker sound was consistent throughout my comparisons, but because I had only two 550Bs, this is all inconclusive. In contrast, the 5500 was transparent--no hearable change from Bypass to In without boost or cut. The 5500 uses a relay with silver contacts in a hardwired bypass system that prevents power turn-on thumps or loss of throughput in the event of power failure.

As compared to most other EQs, equalizing full program mixes is a refined and rewarding process with the 5500--everything sounds API-good right away. I didn't perceive any loss or change when the 5500 was inserted into any processing chain, and I couldn't believe I'd hear just a 0.5dB change!

I used the Range switch like a depth control by first setting it to x1 (meaning ±2dB steps) to quickly find frequencies of interest, and then down to 1 or 0.5dB steps for just the right touch-up. Boosting at 15 kHz or even 20 kHz is smooth and glorious, although you will want to check your digital peak meters for occasional overs. Always a good test of an EQ, boosting +4 dB at 40 Hz on a mix proved the 5500 to be the clear winner with a much tighter bass sound as compared to the vintage 550Bs.

SOLID INSTRUMENT EQ

Recording acoustic guitars necessitates serious carving if they are to fit and compete within a thick pop music track. I used a Neumann U67 set to cardioid and without the roll-off or attenuator. The 5500's two mid-band sections let me boost +2 dB in the 700Hz area and cut -4 dB at 180 Hz to allow space for the low strings. That left the high band set to +2 dB at 12kHz shelf for additional shininess and the low band set to -6 dB at 30Hz shelf for filtering A/C and traffic rumble. After careful mic positioning on a jumbo-bodied acoustic, I got a master-quality recording with classic API sound. I think if you can't get what you like with the 5500, try another occupation.

Equalizing individual drum mics proved the 5500 can get cranky, too. I wound +9 dB at 12 kHz (peak) on a well-used Shure SM57 snare drum mic. The drum had an old and badly flogged head, and the drummer was amazed at the sound I got. With that much boost, usually the source starts to sound more like the equalizer itself--not the case here. The snare drum was bright and open with lots of attack and punch. Kick drums with "boxy" peaks will easily benefit by notching in the 300 to 500Hz range and boosting at 30, 40 or 50 Hz.

NOUVEAU CLASSIC

As my first-choice equalizer for tracking, overdubbing and program, API's 5500 Dual Equalizer might be the most universal piece of gear in a single rackspace to come along. Its uncompromising design performed flawlessly, achieving the classic API sound and fulfilling my highest expectations of any equalizer, be it hardware or plug-in. Price: $2,995; includes a five-year warranty.

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Back To Home Page

Back Up To The Top