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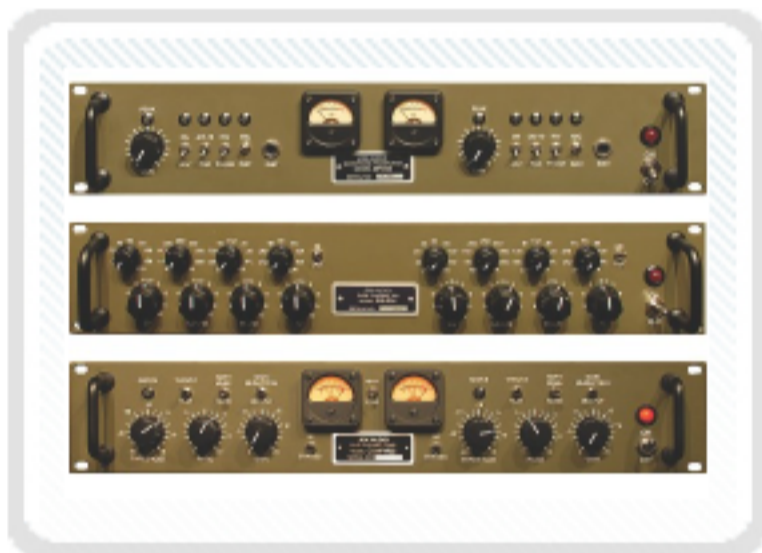
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## JDK Audio R20 Microphone Preamp, R24 Equalizer, and R22 Compressor

By Paul Vnuk Jr.

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JDK Audio is a brand new product line designed, engineered and built by API (Automated Processes, Inc.). API started the JDK offshoot as an outlet for designs and ideas that don't necessarily fit into the usual API paradigm. Currently the JDK line consists of the R20 Microphone Preamp, R24 Equalizer, and R22 Compressor rackmount processors under review today, and the V-14 Equalizer, a 500 Series module version of the R22.

Each unit looks strikingly like new-old-stock army surplus communications gear, housed

in olive-green metal enclosures with military-style nameplates and black pullout rack handles. (This look probably comes from the line's quickly-discontinued original name: Arsenal.) Each unit shares similar black knobs, silver switches, and a front mounted power switch and corresponding red jewel LED. Additionally, both the mic pre and compressor use essentially the same housing and feature a pair of matching moving-coil VU meters.

One of the JDK line's biggest innovations is in its implementation of IC chips instead of transformers, and the compressor's gain reduction circuit. While chip-based audio gear is nothing new, JDK makes use of specially designed, function-specific chips, a technology invented by API and licensed for manufacture to THAT Corp. Each chip is designed to emulate the sound and function of transformers minus the heat, weight and, better still, the cost.

### R20

The R20 is a 2-channel mic preamp. Each channel features a continuously variable gain pot with up to 55 dB of microphone and 31 dB of instrument gain. A quartet of switches handles +48V phantom power, a -20 dB Pad (-10 dB instrument), phase, and a choice of mic/line input source. As mentioned the R20 offers a true moving-coil VU meter (a rare but welcome touch on a pre) as well as a red LED clip light for level watching.

The front of the unit contains a pair of 1/4" instrument inputs, while the rear of the unit houses a pair of balanced XLR ins and outs as well as a pair of additional balanced 1/4" TRS outs. The outputs are wired in parallel and could be used to mult a signal to different

recording and or monitoring sources when needed. (By the way, the other two units have identical rear panel output layouts.)

The R20 is completely new design by the API team with no roots or ties to the past. As you would expect from a transformerless pre, it is of the clean "straight wire with gain" variety. Sonically the R20 has a very smooth and natural sound with a slight mid-forward presence. I would place it below the crystal cleanness of a Millennia or Grace, but still a touch more transparent and natural than a Daking Mic Pre One or Focusrite ISA One.

### **In use**

Bottom line: this is a "what you put in is what you get out"-style preamp, and mojo junkies will need to look elsewhere. But with this sound the R20 works well on most everything; it sounded especially nice on vocals, acoustic guitar, drums, percussion and room mic duties.

When you use it with low-output mics like ribbons, especially if the sound source isn't on the high-volume side, the fairly modest 55 dB of gain that the R20 is designed to produce requires turning the unit up to obtain sufficient gain. The manufacturer agrees that low-output ribbon mics may not be the ideal partner for this preamp, although I can attest to the fact that the unit is clean enough to be run almost wide open when using said mics to get a good level for mellow singers and voiceover work.

### **R24**

The R24 is a 2-channel equalizer that does not care if it's used in dual mono or on a stereo source. Unlike the mic preamp, the R24 does have a touch of vintage roots, as it is an updated recreation of the old ASPI 562 4-band parametric eq from the late 1970s and early 80s. Back then the 562 was actually distributed by API, hence the connection.

Each channel features two rows of variable (non stepped) pots. The top frequency row gives you four choices: 20 Hz to 200 Hz, 100 Hz to 1000 Hz, 500 Hz to 5000 Hz, and 2000 Hz to 20 kHz. The bottom row of larger pots gives you the choice to boost or cut up to 12 dB. While each band is fully sweepable and overlapping, there is no Q control, nor any option to switch the width of the eq curves.

You also cannot change the highest and lowest bands to a shelf or a cut. Instead, the R24 offers a peak/bell curve that starts pretty wide and gets narrower as the frequency gets higher, thus reducing the overlap in frequencies. There are also no Hi or Low pass filters on the unit, nor any input and output gain controls for balancing the overall eq'd signal. The only other control offered is a global bypass for each channel, not the individual bands.

Compared to fully-fledged modern channel strips or multi-featured plug-ins, this eq may seem quite limited in scope. However, if you look at many console and/or program equalizers from back in the day, that's just how they roll, and that's why I was and am pretty excited by this eq.

### **In use**

Again, being chip-based, this eq is of the clean variety, but this isn't a surgical eq by any means. These are broad strokes for bold folks! I will go so far as to say this is the one piece of the JDK line that does have its own vibe and mojo.

The R24 imparts a vintage sound by way of design and how it handles frequencies, not by what it does or does not add via any particular circuitry or lack of iron. As such, on the master bus as a program eq it's great for final tweaks, but you need to be careful to keep your movements minute... 1-3 dB goes a long way with this eq.

On individual instruments it's the complete opposite, and this is a great eq for extreme tweaks of 9 dB and more -- it does go beyond 11... You can take the edge off or fatten up vocals with ease, add some smoothing to cymbals, and even boost the testosterone levels

of your guitar and bass tracks. Drum bus, kick, toms...? In a word, Yes!

Anything I did not like it on? Okay, getting picky, it was a tad too broad for snare, where I prefer a tighter (preferably adjustable) Q and a highpass filter. But having said that, you can tell I like this eq a lot. I like that it does not add any sound, it just takes what is there, and thanks to how the bands play off each other, manipulates it in such a smooth and useful way.

## **R22**

Last up is the R22, a VCA-style compressor that also has a famous pedigree; it's based on the compressors found in the old ATI Paragon live mixing desks. ATI is actually the company who purchased API in the late 1980s.

The biggest feature of these compressors was the Thrust circuit that has since been added to many compressors in the API line, most famously the API 2500. This Thrust circuit is essentially a variant on a highpass filter, and when engaged, it allows low-frequency information to pass through the threshold circuit without clamping down. This gives the effect of a punchier and more present low end while the mids and highs are brought under control around it.

While this type of control is now becoming standard on many modern compressors, and known by many names, back in the preceding decades it was quite rare and the Paragon desks, then the API 2500s, had some of the first compressors to feature such a built-in function.

The R22 is a two-channel unit that may be linked for stereo use. Each channel has three knobs, for Threshold (-40 to +15 dBu), Ratio (1:1 to 10:1) and Make Up Gain (0 to 20 dB). Additionally there are switches to engage the Thrust circuit and choose between Hard or Soft Knee. The VU meter can be switched between gain reduction and output metering, and each channel also has a red LED that lights as the threshold is crossed. Each channel also has its own bypass switch. There are no attack or release settings.

## **In use**

Like the other JDK offerings, this compressor is sonically on the clean side, and like the eq it leans heavily on the simple in/out, push-pull compression designs of the past. However, sonically unlike the eq, the R22 is almost "anti-vintage" in its sound. When we think of vintage compressors our imaginations run wild with words like thick, edgy, bite, and so on. The R22 is, in my opinion, none of those -- to my ears it is incredibly transparent and actually darn near impossible to push to the point of cool edgy pumping. This is not a slam-it-to-death kind of compressor, and that's what makes it so useful.

One of my favorite uses was on the two-buss. Like most buss comps, set at a 2:1 - 4:1 ratio and 2-5 dB of gain reduction, it was not so much what I would call a thick layer of sonic treatment as much as a subtle and pleasant glue, that you really don't know is there until you bypass it. While this almost seems the opposite of what many folks look for in a bus compressor, that's fine, as API already builds one of the most famous gluey, pin-it-down bus comps on the market with the 2500!

Here we have a bus comp for more subtle kinds of music like folk, or jazz or even for rock mixes where you don't want it so apparent. On the drum bus it's great for giving a nice tight coherence to the mix, and engaging Thrust still lets the low-end pulse through.

As on the drum bus, the R22 is really nice on bass guitar, especially when you want the bass to sound controlled and tighter, but not completely pinned down like an LA-2A might do. This is also one of the few compressors really suited to acoustic guitar, where it will tame strumming and picking peaks without totally killing the dynamics of the performance.

I tried to get it to sound aggressive and pump, and it will not do those things in a convincing

way to my tastes. Even at its highest ratio, it is not fast or grabby enough for big drum squashing and slamming, or grungy electric guitars.

When it comes to voices, again -- one word: Great! This is one of the nicest and easiest vocal comps I have ever used. Up to 7-10 dB of reduction, 4:1 ratio, soft knee, no Thrust, and you have a nice, smooth controlled sound that never sounds compressed or unnatural. While for some it may be better suited to pop, country or R&B over, say, alt-rock, this compressor is doggone near dummy proof for vocals, especially during tracking. If you have ever been afraid to print compression while tracking, this box may change your mind.

### Wrap up

All three units are dirt simple to use, built tank-tough, and have no superfluous controls or gimmicks. They also sound great, or don't sound at all, depending on how you look at it. They may not have the instant "wow" factor of some gear and may not be tweaky enough for some, but the more you use them, the more you will find yourself relying on them for solid, fast results. These are growers.

Lastly, the price -- each of these boxes streets at around \$1000. That's 2 channels of API build quality, for around \$500 per channel, so whether it's your first serious mic pre or compressor, or if you simply need more channels of eq in your studio, you should give JDK Audio's gear a try.

**Prices:** \$1195 each

**More from:** JDK Audio, [www.jdkaudio.com](http://www.jdkaudio.com).

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