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JDK Audio R22 Dual Channel Compressor

08.30.2010

It may look like Cold-war era communications gear, but it's really a brand new compressor with an impressive pedigree. If you've ever heard audio flowing through an ATI Paragon console, a very popular analog live console, you've likely heard the R22; its design is taken directly from that channel compressor. Owned by ATI founder/owner Larry Droppa, JDK is essentially a part of the Automated Processes, Inc. family (as Droppa purchased API some time ago). However, please note: this is not an API box. The R22 clearly does its own thing.

Features

All the typical compressor controls are found in the R22, with a few notable differences. The compression envelope is automatic, as no attack or release controls are offered, but a soft-knee/hard-knee switch helps you gain control (no pun intended) as signal crosses the threshold level. Image stability is helped by true power summing of both input channels (for consistent L-R stereo imaging). The "Thrust" circuit helps prevent pumping or dullness due to low-frequency content excessively triggering compression; to my ears, it sounds like a 160 Hz high-pass filter in the sidechain.

XLR and TRS I/O are provided; the R22 does not have sidechain connections (which would be excellent). The large and commanding VU meters show gain reduction or output and a big, rude red LED reminds you that you've crossed the threshold into the land of the attenuated; you'll need constant reminding too, as the R22's transparency may make you forget that it is in. I may be exaggerating that last point a bit, but the R22 really doesn't add much coloration at all, so the red LED will have to remind you when you're actually squeezing things.

In Use

My first tests were with whole mixes. Without being able to slow the attack and release to my tastes, I had to tweak the ratio, Thrust and knee controls before getting the needed congealing and leveling without squashing my snare, kick and tom "poke through" peaks. In the end, my preferred setting was a ratio below 2:1 (what a useful option!), Thrust on and a hard knee. Yes, hard knee — it seems to forgive at the transition more the way I like (while the soft knee tends to grab and make me question my threshold level or wish to slow the attack). As you raise ratio from here, you can hear a little dulling with more attenuation, but at a reasonable 3 or 4 dB, you'll find the R22 nearly invisible other than its subtle massaging of your mix levels and density.

I tracked some bass guitar with results that were just as good as on the main bus. With a Manley TNT preamp (DI through the tube side, ribbon mic on bass cabinet through the solid-state side) and the R22 used in dual mono (no linking) I got just what I wanted; two steady and clean signals, still animated and lively enough for some comp/limiting in

final mix. I settled on 3:1 for the DI using hard knee with Thrust. For the mic I went with 3:1, but no Thrust, soft knee. (I find Thrust preserved all my bottom-end punch, no Thrust helps contain it). Once again, I wish I had a manual envelope, but only a little as the R22 was politely getting the job done without extra dirt or attitude. (Bass guitar doesn't always have to be "browned up," does it?)

On overheads it was the same story — if you like your mics, your room and cleanliness, just slap some 2:1 on the pair, with hard knee and a high threshold, and increase your density without touching any particular frequencies. If you're looking for a Brit-inspired pumping thing, just go 3:1 or higher with soft knee and no thrust; it isn't dirty, but it sure has character.

Across a grab bag of assorted sources (trumpet, handclaps, percussion, group vocals) the bottom line remains constant: this box will squeeze all of the above without grabbiness (as long as you keep ratios low enough) and do it "full bandwidth," without compression artifacts (unless you try to create some). This makes the R22 great for dynamic acoustic sources like string instruments, only occasionally falling short without needed envelope controls for really pesky sources. Lead vocals are similarly addressed: use the R22 with low ratios when accuracy and transparency is your goal, look elsewhere if grit, squashing or girth inspire you. However, I did find uses for the R22's higher ratios and the "grungy" side of its personality.

Applied as parallel compression on a stereo drum bus with low ratios and moderate attenuation, the R22 was Hippocratic in that it "did no harm" to my drum sound and didn't really bring anything other than density to any audio surgery work. Determined to find some flavor, I tried high ratios (10:1, the R22's max) with a low threshold (with signal constantly above threshold) I also liked the R22 strapped across my stereo vocal bus (leads, doubles and backups, the whole group) for some nice leveling and regulation without disturbing the delicate balances or the timbres).

Summary

The R22 is a fine compressor in its own right and comparisons to any legendary API compressors are only general. With "old" and "new" settings, as well as a full complement of envelope controls, API compressors are eminently versatile and can be coaxed into most any application. The R22, however, does two tasks very well: unobtrusive, artifact-free, clean compression or dirty, flattened 1176-style (abused) leveling. With attack and release control, this box would be nearly lethal. Without those, it's still powerful and flexible, for those who aren't afraid of tweaking every single parameter to find sufficient control.

I have found the R22 to be a compressor that I can take for granted to squeeze dynamics without calling attention to itself. That may not sound very glamorous at first in a world often dominated by chameleon-like emulations, powerful signal crushers and processors that scream for attention. But like a football lineman that does very heavy, important work for the team without fuss or glory, the R22 is ready for some heavy lifting without asking for any attention other than the constant reminder of that threshold indicator LED.

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/> SECOND OPINION: JDK Audio R22

by Russ Long

I'm already a fan of the entire JDK Audio product line (the R20 mic pre as well as the R24 and V14 EQs), so I couldn't wait to give JDK's fourth product, the R22 compressor, a run for the money. I've mixed dozens of live shows on ATI's

Paragon II desk, and I've always loved the inline compressor that's on every channel. Since the R22 is based on this compressor, I anticipated it would be great and I wasn't disappointed.

With both balanced quarter-inch TRS and XLR I/O per channel, the R22 is easy to set up and get running. I was somewhat concerned that the lack of an adjustable attack and release time would limit the box's usability, but that wasn't the case. I initially put it to work while tracking a vocal, using an AKG D5 mic through a Gordon Model 3 mic pre and Black Lion Audio AM/CHA1 EQ before going into the R22; the box worked wonderfully. I was able to attain significant gain reduction without any sonic degradation. I also had great results using the box to compress electric guitar (Royer R-122 through a Neve 33115 mic pre and EQ), acoustic guitar (AKG C-28 through a Gordon Model 3 mic pre), and bass (Groove Tubes Brick DI). The R22 pulls the guitars to the front of the mix while still sounding natural. I squashed the bass to death, and it still remained punchy and full yet was completely controlled. The Thrust circuit — placing a high-pass filter in front of the RMS detector — is the closest thing the R22 has to an audio magic switch; it nearly always sounds better engaged as it preserves the bottom-end punch while still providing immaculate gain control and eliminating the over-compression of transients.

The R22 works great as a stereo compressor. If the Link circuit is engaged, channel A controls all of the functions for both channels and the compression control signal is derived from the combined audio signals from both channels. I had great results using the R22 in stereo mode on piano, synth, drum overheads, drum room, and drum bus for parallel compression and stereo bus. In every instance, it worked wonderfully. I wish the link function didn't link the output gain because I'd like to be able to use the R22 to balance a lopsided recording while simultaneously compressing the signal; this isn't a huge issue, though.

My only real complaint about the R22 is the operation of the bright red LED that illuminates when the input signal is above the threshold setting. Typical compression settings result in a bright red blinking LED and unfortunately, my mind has been trained to automatically assume that there is some kind of problem when it notices that a red LED is flashing. Of course, I've started to become a bit numb to the light now, so the next time I clip my ATR-102, I'll likely not even notice until I get to mastering.

Russ Long is a producer, engineer and mixer. He owns the Carport studio in Nashville and is a senior contributor to PAR.
