Groove Tubes Vipre

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The Vipre is an all-tube, single-channel microphone preamplifier that precisely matches any microphone new or old with a choice of four different input-load impedances. Front panel controls may be used to vary the preamp's actual internal circuitry for different transient-response performance characteristics, ranging from the vintage microphone preamps of yesteryear all the way to the super-fast performance of modern, high-slew rate mic preamplifiers. The Vipre has a whopping 75 dB of total gain and flat frequency response from 7 to 100k Hz.

Vipre uses eight tubes for both the Class-A, fully balanced and complementary, differential amplifier and the Class-A, balanced, push-pull output stage. (Keeping the entire signal path balanced from input to the output dictates the use of expensive, multilayer rotary switches rather than cheaper pots.) All eight tubes are thermally insulated and shock-mounted. The entire unit is hand-assembled and wired using the finest components, switches and, of course, Groove Tubes. There are no solid-state devices, integrated circuits or electrolytic capacitors anywhere in the audio signal path. The cabinet and front panel are finished in matte black and feature large, custom-molded RCA vintage-style phenolic knobs and larger-size toggle switches. With its chrome rack handles, a giant old-school-style lighted VU meter and overbuilt heft (weight is 32 pounds), the Vipre is one impressive hombre!

The Vipre offers four input modes, accessible via the input selector knob. On the far-left side of the panel is an instrument input jack designed for direct recording of guitar, bass or synths. This input feeds a special high-impedance (47-kilohm) circuit centered around its own GT 6205 tube. I liked the fat sound of this direct path and now use it all the time. There is also a -20dB instrument input position for hotter levels, useful for synths or guitars with active electronics. The next mode/position is the fully balanced transformerless bridging input (12-kilohm impedance), which is closer to the input impedance of many modern preamps, followed by the main variable impedance input. Both of these modes use the rear panel XLR connector, and there is an additional rear panel TRS mic/line input that accepts levels 20 dB hotter than the XLR. If both the XLR and TRS jacks are active, then they will mix internally. (They enter the amplifier circuitry at different points.) Toggle switches engage a Phase Flip switch and a gentle, 4dB-per-octave highpass filter starting at 100 Hz.

The Impedance Selector knob selects among 300, 600, 1,200 and 2,400-ohm input impedances by switching between four different sets of primary windings of a specially designed input transformer. This very large "humbucking" transformer, which is manufactured by Tom Reinchenbach at CineMag, is encased in two mu-metal shielded cans and offers a technically correct way to alter input impedance by using different windings and *not* by just adding loading resistors.

My favorite controls on the Vipre are the two large, stepped Gain control knobs. The coarse Gain control is graduated in 5dB steps from 20 to 70 dB, and the fine Gain control adds or subtracts from the coarse setting in 1dB steps from -5 to +5 dB. In operation, I set my "ballpark" gain setting with the coarse control and then dialed in a final level in 1dB steps no audible pops or clicks when rotating either control. This method offers exact repeatability but does not allow gain riding for smooth changes in level while recording, because, to maintain fully balanced operation throughout, the Vipre has no output level pot.

Between the two Gain controls is a large, lighted VU meter. The RMS reading meter is augmented with two clip LEDs; a green LED lights up at -3 dB before clip and the red LED indicates full clip. The Vipre is capable of +30dBm (24.4-volts RMS or about 1 watt!) maximum output at the output XLR, but there is an additional ¼-inch TRS balanced output jack from a separate output transformer winding that is referenced to -10 dBv.

To the right of the meter is a unique feature, the VU Meter Range control. The Vipre has a meter driver circuit board for enhanced metering. At the 0VU Meter Range switch position and when the needle reads 0VU, the meter shows an actual +4dBm output level. Three more ranges "re-reference" 0VU on the meter to +10, +20 and +30dBm levels, respectively. These higher scales provide for accurate measurement when sending super-hot output levels to 24-bit digital systems without them, the meter would be pegged! Finally, the Expand VU mode broadens the range of the meter from a typical VU meter range of -20 to +3 dB up to a wider -60 to +13dB range. Expanded mode is great for wide dynamic range recordings such as vocals, Foley work and classical music, and makes it easy to "see" potential problems such as air conditioning or room rumble.

The Rise Time control sets the amplifier's rise time or slew rate. Five different settings range from the Slow position (about 0.75 volts per microsecond, a commonly used setting for vintage audio equipment) to Fast at 6 volts per second, a more typical spec for modern preamps. The net effect of such manipulation is a sort of control over the aggressiveness of the Vipre's sound. I found that percussion and similar sounds were clearer and (apparently) brighter on the Fast mode setting. Slow mode was better for sounds and vocals that tended toward the harsh, and effectively smoothed or rounded out edginess. In use, I found the in-between switch positions extremely subtle and wound up using only the two extremes, Slow and Fast.

The Vipre has a +48V phantom power on/off and the often-overlooked output Mute switch, a feature that is too rarely included in outboard mic preamps. The Vipre has two power switches. The manual states that, to prolong tube life, it is advisable to first power-up the unit with the Standby/B+ switch in standby while the B+ (high voltage) stays off until the filaments have warmed up properly. The manual also recommends that the Standby switch be used during session downtimes and that the Vipre should be powered down with the main Power switch at the end of the day.

While using the Vipre, I found that it was hard to read the front panel markings in the darkened control room. Groove Tubes explained that the initial front panel run came in with excessively dark silk-screening, and all future units will have the classic GT cream-colored marked panels, which are easy to see in any light. In fact, it doesn't really matter much, because the unit is so simple to use once you have selected source, impedance and rise time.

I also tested the Vipre by recording female vocals through a U67, M49, a B.L.U.E. Tube or a Shure KSM44. In each case, the impedance switching changed my opinions about each of these mics. In general, the vintage mics (including the B.L.U.E.) sounded fuller, louder and had more gain when the impedance switch was in the 300-ohm position. The newer Shure was happy at any position and sounded the best I have ever heard it. The effect of changing the rise time while recording vocals is subtle, but you can hear a little difference in the high frequencies. I usually selected the Slow position, as I was going for a "mellow" sound on one particular song. I also used a Tube-Tech CL-1B compressor after the Vipre when recording vocals and found that getting good, hot levels with as much (or as little) control as I needed was extremely easy. Because the Vipre allowed me to easily put a +10dB level or more into the compressor, off-mic dynamics sounded clear and focused.

Electric guitars shine well through the Vipre. I tried my Royer R-121 ribbons, and they were happy at 600 ohms and the Fast rise time position. Even SM57s sounded good, with a little more roundness than I usually get with other preamps.

On percussion, I used the Fast position and the transformerless input. Most of the time, I prefer to start out with very quick transients on percussive sounds as they have a tendency to get "sanded down" with successive processing. I liked that I could, with a flip of the switch, audition the transformerless against the variable impedance when the musician is on mic.

I recorded a direct bass and had some fun by deliberately overdriving the Vipre using about twice the amount of gain required. The +20dB meter range was useful here, because I had to reduce the output at my Pro Tools I/O input to come back *down* to a full 24-bit digital level. Overdriving the Vipre produces an extremely aggressive distortion reminiscent of those 1950s blues records where you can hear the singer occasionally blow up the mic and/or preamp.

The Vipre offers the engineer a whole new world of tube sound choices in a single, well-made, great-sounding unit. The culmination of over three years of work by Aspen Pittman and Groove Tubes' engineering staff, the Vipre is the epitome of vintage tube amplification perfected for these digital times. MSRP is $2,999.

Groove Tubes, 543 Truman St., San Fernando, CA 91340; 818/361-4500; **www.groovetubes.com**.

Special thanks and a lotta love go to Neil Giraldo and Pat Benatar for helping evaluate the Vipre while engineering their upcoming album. Barry Rudolph is an L.A.-based recording engineer. Visit his Website at **www.barryrudolph.com**.

Why Variable Impedance?

Aside from a resistive input level attenuator pad and a phantom power switch, a lot of microphone preamps give the recording engineer just a single control: gain. Essentially, there is no way to "customize" or match the microphone preamp to the particular microphone or other source. The preamp's input impedance is just fixed

(internally) and is usually high enough that, electrically, it will work okay in most any situation. This seems odd, given the fact that music sources undergo their biggest and most important change in level at this first critical amplification stage. A condenser microphone's output level can require from 30 to 50 dB of gain (depending on the mic and singer) to raise it to a nominal +4dBm line-level ready for any further processing and subsequent recording. Today's 24-bit digital systems require even more amplification (gain), better dynamic range and lower noise, all factors that put even more importance on the microphone preamp.

Additionally, the same microphones sound different when used with different mic preamps. We all have our favorite mic pre/microphone combinations for specific recording tasks, and many engineers, producers and studios have amassed large and varied preamp collections over the years. Among microphones with similar topology Class-A preamps, it is mostly the effects of different input characteristics that we hear.

Early audio circuits were designed for maximum power transfer (called the Transfer Function) between units. Input and output impedances would be matched carefully for best efficiency and the most gain. Vintage condenser and ribbon microphones were designed to sound best when loaded or terminated by the specific load impedance of the mic preamp's front end transformer. Modern transformerless, solid-state microphone preamps (as well as most all modern audio gear) have from 10 to 20x higher input impedance than most sources plugged into them. These are called bridging inputs, and they present nearly no load to the microphone source and certainly do not present the load the microphone was originally optimized for.
— *Barry Rudolph*