

# Presonus ADL700

## Channel Strip

Presonus's new valve channel strip boasts professional features and a price tag to match!



### HUGH ROBJOHNS

American manufacturers Presonus have been in business for nearly 20 years, and have built a reputation for good-sounding, affordable products. The company's catalogue spans an unusually eclectic assortment of devices, from solid-state and valve preamps to digital mixing consoles, active monitor controllers, computer interfaces, and even a DAW.

The subject of this review, though, is the company's new flagship ADL700 channel strip, a fully featured single-channel valve mic preamp with line and DI inputs, as well as comprehensive EQ and FET-based compression. It uses the same Anthony DeMaria-designed valve gain stage as the existing ADL600 dual-channel valve preamp. The tube circuitry is entirely class-A, apparently with  $\pm 320V$  supply voltages, and Cinemag input and output transformers with nickel/iron cores take care of the balanced interfacing with the outside world. The fast, discrete, FET-based compressor, four-band equaliser and overall design, meanwhile, are the work of Presonus's Robert Creel. In essence, what we have here is a boutique valve preamp with mass-market construction, pricing and appeal.

### Overview

The ADL700 is contained in a substantial, 2U, rackmounting steel enclosure about 360mm deep. The rear panel carries XLRs for the balanced mic and line-level inputs, plus a third XLR for the balanced line-level output. A TRS socket is also provided for linking the compressor's side-chain with a second ADL700 for stereo applications. Mains power is connected via an IEC inlet

with integrated fuse holder, and the AC supply voltage is fixed at the factory.

The front panel is a busy affair, hosting 11 chunky toggle switches and 18 rotary controls, the latter grouped either side of a central VU meter protected behind a very chunky bezel. The controls on the left configure the preamp and compressor, those to the right the equaliser section. The two rotary switches for input source and coarse gain feel a little flimsy, but the rotary pots offer a nice level of mechanical resistance, and the toggle switches are satisfyingly solid without being excessively stiff. The control functions are all clearly labelled with white legends on a black background, and the overall impression is of solidity and professional reliability.

The toggles across the bottom of the unit are active when in the 'up' position, and most have blue status LEDs. The five switches to the left of the meter select output polarity reverse, +48V phantom power, a 20dB pad (for the mic input only), and compressor bypass, and reduce the output-level meter signal by 6dB when you want to drive the output hard without pegging the needle to the end-stop. The six toggles to the right switch the meter to display compressor gain reduction instead of output level, change the EQ LF section shelf-response to a bell curve, bypass the EQ completely, insert the EQ section before the compressor instead of after, change the HF section to peak response, and switch on the mains power.

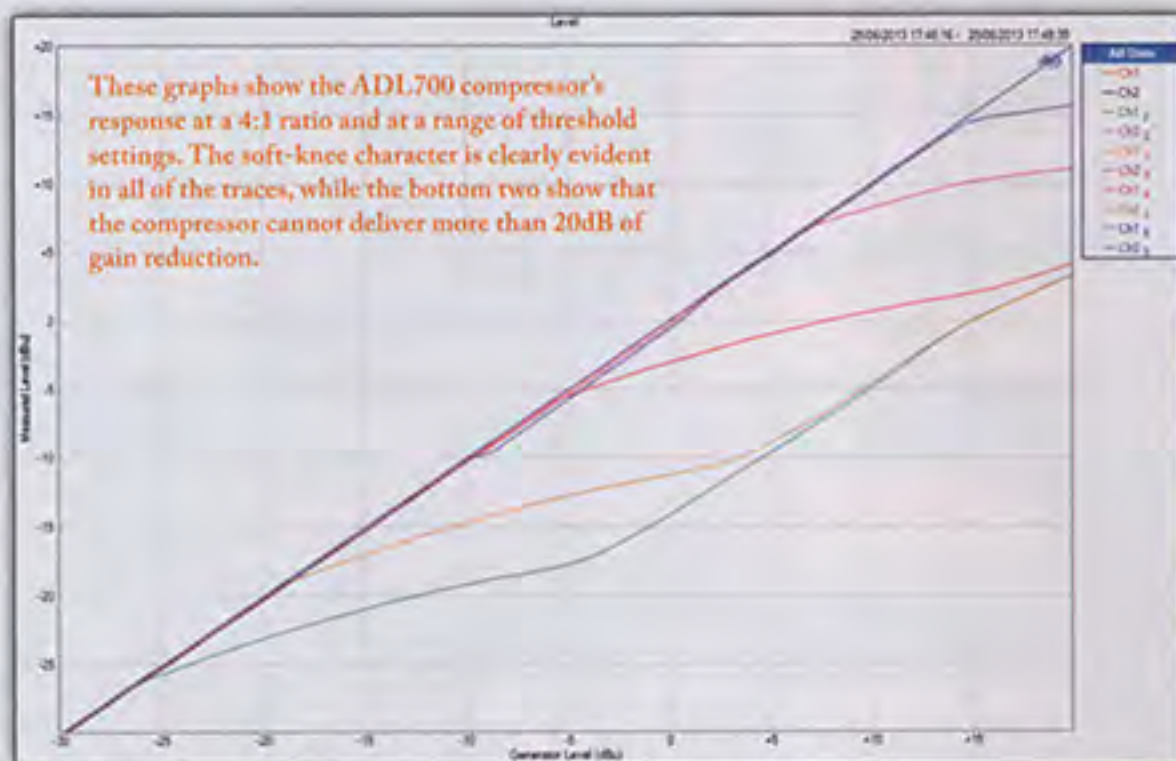
### Impedance & Gain

Input-source selection is via a six-way rotary switch, with four options for the rear-panel mic input, selecting 1500, 900, 300 and 150

$\Omega$  input impedances. I would have preferred fewer low-impedance options and one or two much higher settings; 5k $\Omega$  and 15k $\Omega$  would, respectively, be more appropriate for most electronic-output and ribbon mics. Nevertheless, these low-impedance options provide some interesting tonal effects with dynamic mics. The line input has an unusually low input impedance of 2k $\Omega$  (10k $\Omega$  or higher is more typical), and that of the instrument input is unusually high, at 100M $\Omega$ .

The coarse input gain is switched in 5dB increments, labelled from 30 to 65dB, and a continuous Trim control located above is provided for fine-tuning of levels, or for active gain-riding — the small pointy knob actually lends itself to that task rather well. Unfortunately, there is no unity position marked on this control, nor a centre detent, but assuming the unity position is with the knob at 12 o'clock, the gain range is roughly +8 to -13dB (although it's marked  $\pm 10$ dB). Passing a line-input signal at unity gain requires the coarse gain control to be set to 40dB, and the Gain Trim and Output controls set to the 12 o'clock position.

With the output, Trim and input gain controls all turned fully up, the maximum gain available to a mic input is an impressive 72dB. If the compressor make-up gain is dialled in as well, there is an astonishing 87dB of gain available overall! However, with the Trim and output controls set to their mid-way positions, and the coarse gain control at its maximum position, the actual gain through the preamp is just 56dB rather than the marked 65dB. Similarly, at the minimum (30dB) coarse gain setting, the actual gain provided is 23dB. Neither is a problem in practice, but these things



» trouble a geek like me! The mic preamp's equivalent input noise (EIN) figure is -123dB (A-weighted), which is pretty good for a valve preamp, while the noise floor is around -95dBu (A-weighted), and the maximum output level is a generous +28dBu (for 0.5 percent THD). Altogether, this gives a usable dynamic range of 123dB, or about 6dB more than most computer interface converters.

The final input-conditioning facility on the ADL700 is a second-order (12dB/octave) high-pass filter with a turnover frequency continuously variable between 20Hz and 200Hz. A full bypass mode is activated by an integral switch when turned fully counter-clockwise. With the HPF switched out, the unit's bandwidth stretches impressively between 10Hz and 45kHz at the -1dB points, and about 8Hz and 80kHz at the -3dB points.

### Compressor & EQ

The compressor section is controlled with five knobs, starting with a Threshold control ranging from +30 to -20dBu. An integrated switch at the counter-clockwise end configures the unit to become the side-chain slave device in a stereo setup, and an adjacent blue LED warns when this mode is active. In this setting, only the Gain Make-up control works, all the other functions being entirely dependent on the connected master unit.

The first half of the continuously variable Ratio control's rotation covers the uber-gentle compression ratios between 1.2:1 and 1.5:1, and the maximum ratio here is 4:1 — just the starting point for so many of the 'classic' vocal compressors. The transfer curve has a very smooth 'soft knee',

although my test with an Audio Precision analyser revealed a slightly odd behaviour when very low compression thresholds are employed. It seems that the maximum attenuation of the FET is restricted to about 20dB, and when that level is reached, the compression slope returns to a 1:1 ratio. This slightly quirky behaviour is not likely to be a problem if the ADL700 is used as a conventional channel strip, but could become an issue if you wanted to use it for heavy-duty parallel compression.

Up to 18dB of make-up gain is available, marked in 3dB increments, while the Attack and Release controls are marked only with 'fast' and 'slow' legends! The manual suggests that the Attack control spans 0.5 to 10 ms, while the Release covers 30 to 500 ms; there is no auto-recovery mode. Normally, the compressor section precedes the equaliser in the signal path. A toggle switch allows this arrangement to be reversed, which is a very useful facility, but would have been even more useful if all or a part of the EQ could have been routed to the side-chain signal path instead, to influence the dynamic behaviour without changing the timbre of the source signal.

Although neither the input gain trim or output controls have centre detents, all four of the EQ section's gain controls do! The gain range is an overly generous  $\pm 15$ dB for each band, and the centre frequencies are adjustable in nicely overlapping ranges (20-250Hz, 160-2000Hz, 0.8-8kHz, and 2-20kHz). The symmetrical, bell-shaped EQ curves have a broad bandwidth, with a Q of 0.55, which is ideal for very gentle and musical tonal shaping, but not for the surgical removal of unwanted resonances. The top and bottom bands are configured

## Presonus ADL700 \$1999

### PROS

- Very quiet and clean valve preamp with masses of headroom.
- Good-quality DI and line inputs provide useful versatility.
- Subtle but useful transformer and tube saturation enhance the sound in a refined way.
- EQ and compressor signal path can be reversed.
- Musical four-band EQ is very good for tonal shaping and gentle correction.
- FET compressor is responsive and transparent.
- Well built and attractively designed.

### CONS

- Control legends leave something to be desired in many cases.
- Gain structure is a little vague and confused.
- Compressor ratio and maximum gain reduction are restricted.

### SUMMARY

A high-end valve preamp with mass-market ease of use and very versatile facilities. Anything with design input from Anthony DeMaria is always interesting, and the ADL 700 doesn't disappoint.

as shelf equalisers by default, but can be switched to have a bell response. Overall, the EQ sounds very musical and transparent, and the provision of four overlapping bands allows quite complex tonal shaping to be performed if necessary.

The last, large knob on the extreme right-hand side of the unit adjusts the output level. This is calibrated with +10dB of extra gain when turned fully clockwise and the counter-clockwise end is marked -80dB. As mentioned earlier, the unity position seems to be at about 12 o'clock, although it is unmarked and there is no centre detent. However, the actual output level will vary slightly depending on the input impedance of whatever the ADL700 is connected to; the ADL 700's meter 0VU mark appears to be calibrated for +4dBu at the output when terminated with a high-impedance load.

### In Use

Presonus's new channel strip is impressive to look at, to use and to hear. It feels solid and professional, and you get a lot of controls for the money. The intrinsic sound character is essentially clean and surprisingly quiet — always reassuring from a valve product! — but also exudes a hint of low-end weight and body that makes it sound a little larger than life. This impression grows as the input

## Inside The Box

The build quality of the ADL700 is very good. A linear power supply and its transformer are screened from the audio electronics with a full height L-shaped steel plate, and there are no fewer than 10 regulator chips (or series transistors) mounted on heat-sinks on the back and centre-shield panels. The IEC socket's safety earth is bonded directly to the steel rack case.

While the power-supply section uses conventionally sized components, most of the audio circuitry is constructed from surface-mount devices (SMD). Sealed relays provide all the switching functions, and large Cinemag input and output transformers take care of the interfacing. A trio of double-triode valves provides the principal gain stages: two Russian Electro-Harmonix 6922EHs (E88CC) for the main gain stage, and a JJ Electronics ECC81 (12AT7) as the output driver. A number of different op-amps are also present on the PCB, but these appear to mostly handle ancillary parts of the circuitry, such as the meter drive and the compressor side-chain. However, this is a hybrid device, since the EQ stage employs integrated circuits as gain stages, and the compressor itself employs a fast FET as the attenuating element, with a THAT 2252 chip providing the side-chain RMS-level detection.



» levels are pushed harder and the input and/or output transformers start to saturate in a nice way. Initially, its low-end weight may give the impression that the ADL700's top end is a shade dark, but in fact it is quite airy and detailed: there really is no lack of presence here, although it does introduce a subtle, glossy sheen across the high end. There is also the inevitable trace of 'valve warmth', of course, especially when the gain stage is deliberately pushed, but actually this is a very linear, modern-sounding valve preamp — the way I like to think good valve preamps should be. It does not have the exaggerated, overly rich and crunchy sound we associate with low-voltage designs and budget offerings, nor is it as obviously coloured as something like a Thermionic Culture Earlybird, but it has more body and warmth than, say, a GML solid-state preamp.

In fact, if I'm being brutally honest, this preamp can sound a little bland and even characterless when used conservatively, not that that's necessarily a bad thing. However, it really starts to come alive when the gain stage is pushed a bit, forcing its trio of valves to reveal why DeMaria and Creel put them in this box in the first place! When worked, the ADL700 starts to deliver a very attractive, subtle richness, particularly in the mid-range frequencies, that just sounds musically right on many vocal styles and with a wide variety of mics, including dynamics. The mic-input gain range is more than sufficient to cope with

high-output capacitor mics, dynamics and low-output ribbons. As I mentioned earlier, the maximum input impedance of 1.5k $\Omega$  is a little low for a traditional ribbon mic, although the lower settings offer some usefully creative tonal re-balancing options. With a maximum input level of 30dBu (with the pad engaged, or +10dBu without) it is impossible to overload the gains stage's front end, although the transformer starts to saturate gently with very hot mic signals. I wouldn't normally choose to record vocals with the ubiquitous Shure SM57, but I found that it can be made to work surprisingly well with the ADL700, with the input impedance set to 300 $\Omega$ , a little high presence dialled up on the EQ, and the compressor adjusted for some gentle dynamic control. There is a remarkable amount of headroom too, so you can drive the thing quite hard without fear of suddenly banging into the crunch zone! There is a crunch zone, and it doesn't sound too good when you find it — but it is a very long way up and you have to be pretty brutal to reveal it.

The line input is very quiet, with masses of headroom, and I liked its ability to dirty things up subtly through the valve and transformers. The instrument input also worked well with my Washburn bass and my daughter's Fender Strat. Sound character is pretty neutral, with a mild suggestion of mid-range richness and presence.

The compressor is accurate and responsive, and very good for managing

the normal dynamic excursions of most vocal performers, subtly but firmly. With a steepest ratio of just 4:1 and a maximum of 20dB of gain reduction, this probably isn't the right device for slamming drum takes, but the low ratios ensure transparency, even with large amounts of gain reduction. The attack and release time ranges also seem to be optimised for speech and vocals.

The EQ section offers a lot of flexibility, but I wonder if the gain range provided isn't actually a little excessive. With such a broad Q value for each band, this EQ is really only usable for gentle tonal shaping, which means that it would be rare to dial in much more than 6dB of boost or cut. A  $\pm 6$ dB or  $\pm 8$ dB gain range might therefore be more appropriate, and would certainly make it easier to fine-tune a curve.

Overall, though, PreSonus should have strong sales with the ADL700, as it takes the character of the ADL600's mic preamps and adds some useful additional features that will appeal to those who seek a high-quality and versatile channel strip, with nicely balanced but not overblown character. This is a very grown-up product and I enjoyed working with it very much. **////**

**S** \$1999.  
**T** PreSonus +1 225 216 7887.  
**E** info@presonus.com  
**W** www.presonus.com