



# Mackie 1642 VLZ3

## 16-channel Analogue Mixer

Mackie's VLZ Pro mixers gained a reputation for punching above their weight. Could this next generation do even better?

*Hugh Robjohns*

**M**ackie's range of compact VLZ mixers have acquired almost legendary status over the years as solid, reliable, versatile and good-sounding desks. There was a brief manufacturing period when internal wire links became somewhat undependable, but this issue was resolved quickly and easily on those desks that suffered from it, and the reputation remained

untarnished in the minds of most users, myself included. From the original VLZ design, the brand has steadily evolved, first to the VLZ Pro series, then spawning the Onyx range, and now the latest addition: the VLZ3 series, which, like the VLZ Pro range, comprises 12-, 14- and 16-channel models.

The manufacturers seem proud of the advances made, citing an improved mic preamp design, more refined EQ and improved mix-bus headroom. Although the VLZ Pro models punched well above their weight anyway, these are all areas in which they were, if you were to be really picky,



a little weak. In fact, it always struck me that the remarkable quality of the original XDR mic preamps was let down by the rather average mix bus and limited headroom imposed by the rest of the mixer. So I was as keen as anyone to see if the new VLZ3 really could raise the bar to a new level.

## Overview

The ergonomic and operational features of the new 1642 desk remain almost identical to the previous model. In fact, the only obvious differences I could find are changes to the centre frequencies of the four-band EQ on the stereo channels and the inclusion of a mains input voltage selector. The block diagram published in the handbook is even identical to that for the previous generation console. But then, it obviously makes sense to follow the old adage of 'if it ain't broke, don't fix it', since the 1642 mixer has always been a well

thought-out console, which is both easy to use and very versatile. Why change that?

Given the operational similarity to the previous model I'll only give a brief guided tour, as there is little new to see here. The first eight channels are mono mic/line inputs, with an XLR for the mic and a TRS socket for the line input. There is no mic/line switching: selection is simply on the basis of which connector is being used, with the line input effectively passing through a 15dB pad before reaching the mic preamp stage. Phantom power is switched globally across the whole console, but only appears on the XLR sockets, of course. A second TRS socket is provided on each channel for an unbalanced insert point (which can also be 'bodged' to serve as a pre-fade direct output by partially inserting an output plug).

Moving down the channel strip, the gain control is marked from zero to 60dB of gain for mic inputs, and +15 to -45dB sensitivity for line inputs. A push button engages a third order (18dB/octave), 75Hz high-pass filter. Next come four aux send controls, the first two of which have red knobs and are switchable pre-/post-fader as a pair. The second pair have orange knobs and are fixed post-fader. As with previous designs, a centre detent identifies the unity gain position, and a further 15dB of gain is available if required.

The channel equaliser is identical to the previous console design, with shelving top and bottom sections ( $\pm 15$ dB of gain from 12kHz and 80Hz, respectively), plus a sweep mid providing  $\pm 15$ dB of gain centred between 100Hz and 8kHz. Sadly, there still isn't an EQ in/out switch — one of the very few significant omissions of this design and continued from the previous models. The

## Alternatives

The VLZ3 series compares favourably with most analogue mixers in the same price range. If you are looking for alternatives for comparison, Mackie's Onyx series offers similarly good quality, but with a much more coloured, warmer sound. For transparent-sounding preamps like those of the VLZ3, you should check out models by Allen & Heath and Spirit.

absence of such a switch is frustrating, as it would not only allow unused EQ circuitry to be bypassed, it would also make it far easier to determine whether EQ adjustments are actually helping to improve a source or just making it louder and brighter!

At the bottom of the channel strip is a pan control (-4.5dB attenuation in the centre position) and a mute button. Adjacent to the top of the 60mm fader are two dual-purpose LEDs. A green one flickers to indicate the presence of signal (above  $-20$ dBu) and lights steadily when the Solo/PFL mode is engaged. A red one flickers when the signal level nears clipping, and lights steadily when the channel Mute button is pressed. Four push-buttons in a column alongside the fader activate the channel solo/PFL mode, and route the output to pairs of the four group buses and main stereo mix.

The first two stereo channels, 9-10 and 11-12, are equipped with mono mic inputs as well as stereo line inputs. The mic input appears on both channels of the stereo pair and is equipped with the same 60dB gain trim and high-pass filter as the mono channels. There is no insert point on these stereo channels, though, as the socket has been reallocated to serve as the second channel line input. The last two stereo input channels, 13-14 and 15-16, are line-only affairs, with a reduced input gain range of  $\pm 20$ dB. In all cases, plugging a source into only the left line input routes the signal to both channels in dual mono.

All the stereo channel facilities are identical to the mono channel: the same four Aux sends are provided, along with the same bus-routing switches, and so on. The only difference is that instead of a three-band EQ with sweep mid, the stereo channels are equipped with a fixed four-band equaliser. The top and bottom sections provide the same shelf responses at 12kHz and 80Hz, but the two mid bands centre on 2.5kHz and 400Hz. This is the first radical departure from the previous version of the desk, as that had centre frequencies of 3kHz and 800Hz. The new lower settings — especially the low mid — seem to be much more appropriate for tweaking commercial music and thinning out sources like synth pads. Clearly, this change has resulted from the feedback of end users, and is a worthwhile improvement. ▶

## SOUND ON SOUND

### Mackie 1642 VLZ3 £563

#### pros

- Even better sound quality, overall.
- Robust build but with refreshed styling.
- Versatile facilities.
- Professional quality at budget prices.

#### cons

- The lack of an EQ bypass still rankles.
- Modest changes to crosstalk and noise specs illustrate the 'swings and roundabouts' nature of circuit design!

#### summary

Based very closely on the previous VLZ Pro model, the new VLZ3 retains the key features of the original but delivers even better sound quality, thanks to several critical circuitry revisions. The sonic neutrality of the previous generation of console has been retained, but with greater headroom and a less strained sound when driven hard.

## MACKIE 1642 VLZ3

## Output Side

The output section of the console is, once again, almost identical to its forebear. Only the first two aux sends are provided with master level controls, again with unity gain centre detents and 10dB of extra gain

available. Each of these aux sends also has a solo (after fade) button and associated warning LED. Aux sends three and four simply appear on balanced (ground compensated) output sockets on the rear panel, with no master level controls, and no AFL monitoring. Below the two aux masters is a pair of LEDs to indicate the presence of mains power and the status of phantom power, both being switched on and off from the rear panel.

To the right of the aux send controls is a section handling four dedicated stereo effects returns. Each has an input level control with up to 20dB of gain, and each is routed to the main stereo mix bus by default. However, the first return can also be sent (as a mono sum) to the aux 1 bus through a separate level control, and the second return can be routed similarly to aux 2. These facilities are ideal for sending reverb to a vocalist's headphones, for example.

The third stereo return can be switched away from the main stereo bus and routed, instead, to either pair of subgroups. The fourth return can also be switched away from the main stereo bus and routed, instead, to the control room

"If it ain't broke..." One of the channel strips from the Mackie VLZ3 series mixers. There's little departure here from the VLZ Pro series (though the centre frequencies of the four-band EQ have changed slightly), and it remains well laid out and easy to use.

monitors/headphones — which is useful when recording against a reference track, for example. The four stereo returns can be solo'd *en masse* by a dedicated push-button.

The monitoring section is dominated by a vertical stereo bar-graph meter, with the '0' mark equating to 0dBu (rather than the more common +4dBu). This has been a consistent policy of Mackie consoles, and while it makes perfect sense to me with my broadcaster's hat on, I know it causes confusion amongst many brought up with the idea that 0VU equates to +4dBu. A group of four push-buttons is used to select the

monitoring outputs are on another pair of TRS sockets, along with duplicates of the main mix-bus outputs, and a pair of unbalanced inserts are provided for the main mix bus. A summed mono main output is also provided on a single TRS socket, with a separate volume control adjacent to the socket. A pair of male XLRs provides the main stereo mix output, and a recessed push-button allows the level to be attenuated by 40dB, allowing the output to feed the mic input of a recorder or another mixer. I've already mentioned the two rocker switches which turn on the mixer and activate

**"The new design seems to have retained the sonic neutrality of the original, but it is noticeably cleaner and less strained when handling hot signals."**

monitored source from the stereo tape return, each pair of subgroups, and the main stereo mix bus. The tape return is equipped with a rotary level control, providing up to 20dB of gain, and a push button allows the signal to be routed straight to the main mix bus, if required. The tape inputs are provided on a pair of RCA phono sockets, along with a second pair to provide a recording output from the stereo mix bus, all optimised for -10dBV nominal levels. A 12V gooseneck lamp feed is also provided on a BNC connector.

Separate level controls are provided for the main control-room monitors and the dual headphone output, as well as a separate level control for setting the solo'd signal volume. A push button selects post-fade (AFL) or pre-fade (PFL) solo mode for the channels. The headphone amplifier is a very beefy design indeed, capable of producing quite deafening levels — so use with care. Finally, at the bottom of the section, the four subgroup faders are provided with buttons to route their outputs to either or both of the two mix bus channels.

## Rear Panel

Turning now to the rear panel, all but the main outputs are balanced using the versatile ground-compensated topology, while the main outputs (XLR and TRS) feature fully active output drivers. The first eight input channels are provided with post-fade direct outputs on TRS sockets, and the four subgroup outputs are doubled up across eight output sockets, to make connection with an eight-track recorder simpler. Group 1 also feeds output 5, group 2 feeds output 6, and so on. The four aux sends are also presented here on TRS sockets, as are the four stereo returns. The control room

phantom power. A recessed slide switch determines the input mains voltage, with options for 100, 120 and 240V AC.

The mixer's steel-framed chassis is as strong and sturdy as we have come to expect, and the front edge under the faders is recessed on this new range to form a convenient carrying handle. The overall styling has been refreshed to look more modern than its predecessors, but the revised form hasn't detracted from the function in any way. Unlike the earlier versions of the console, the connector section is fixed and can't be rotated to facilitate rack or desktop mounting, but rackmount ears are optionally available, if required. Usefully, a series of graphics printed on the rear panel shows the appropriate connector wiring requirements.

## Technical

All the key features that we associate with Mackie desks have been retained: sealed potentiometers, steel chassis, control knobs designed to pass forces to the console metalwork rather than into the pot mechanisms, and so on.

Most of the improvements to the new console are hidden beneath the top panel, and concern refinements to the circuitry. Most importantly, the XDR mic preamp stages have been enhanced to a new second generation form called XDR2. An important improvement in the new XDR2 preamp is a significantly extended frequency response, but not at the high end: the vital change is in the low frequency (LF) extension. In my experience, LF headroom and extension is what differentiates an average mic pre from a great one, and it also helps to avoid heavy phase shifts building up as the signal passes through other circuit stages.

There is also more headroom in the new



preamp design too, accommodating signals to +22dBu without coloration, and with a claimed 130dB dynamic range. The distortion figures are also much improved, with total harmonic distortion falling to a superb 0.0007 percent. RFI rejection also remains a cornerstone of the input design — important when the circuitry has such a wide bandwidth — and the input impedance has been raised from 1.3 to 2.5kHz, which will benefit users of dynamic microphones with more high end and less coloration.

The other major change to the console is in the mix bus, with a revised topology that keeps the signal level depressed through the mix amps and bus faders, before making up the gain in a post-fade buffer. This provides greater headroom, making it easier to mix lots of hot signals with less distortion. Indeed, the overall console THD figure has been halved in comparison with the previous design, to just 0.0025 percent — and that can be heard in terms of less coloration, especially when driving the desk hard.

Strangely, though, the crosstalk figures appear to have worsened slightly in the new console, up 2dB from -84dBu in the previous console to -82dBu in the new VLZ3. Similarly,

the main mix noise with all faders at unity is also a little worse, up 4dB from -90 to -86. In practice, though, I doubt whether anyone would be able to tell the difference, and with the greater headroom and lower distortion offered it is now easier to drive the desk harder than before anyway, permitting a greater dynamic range.

## Impressions

I have long been a fan of the original VLZ Pro consoles and their XDR preamps, which have always been amongst the best of any budget console and, for that matter, nipping at the heels of many high-end consoles. Indeed, I regularly use a little 1402 VLZ Pro mixer for recording 'serious music', with excellent results.

The new design seems to have retained the sonic neutrality of the original (as opposed to the definite 'sonic flavour' introduced with Mackie's Onyx preamp design), but it is noticeably cleaner and less strained when handling hot signals. Noise levels seem much the same, but the bottom end sounds fuller and more natural.

Mix bus headroom was always a weak point in the original designs, but there has

been a significant step forward with the VLZ3. Previously, I was wary of allowing signals to reach +7dBu on the console meters, as the sound quickly became strained above this, but when using the 1642 VLZ3 desk I found it remained clean and unstrained even with the +10dBu LEDs on all the time — which is a vast improvement.

The other important change is to the stereo channel EQ. Reducing the centre frequency of the low-mid band has made it much easier to apply tonal correction that works musically. It's surprising just how significant that change is in practice.

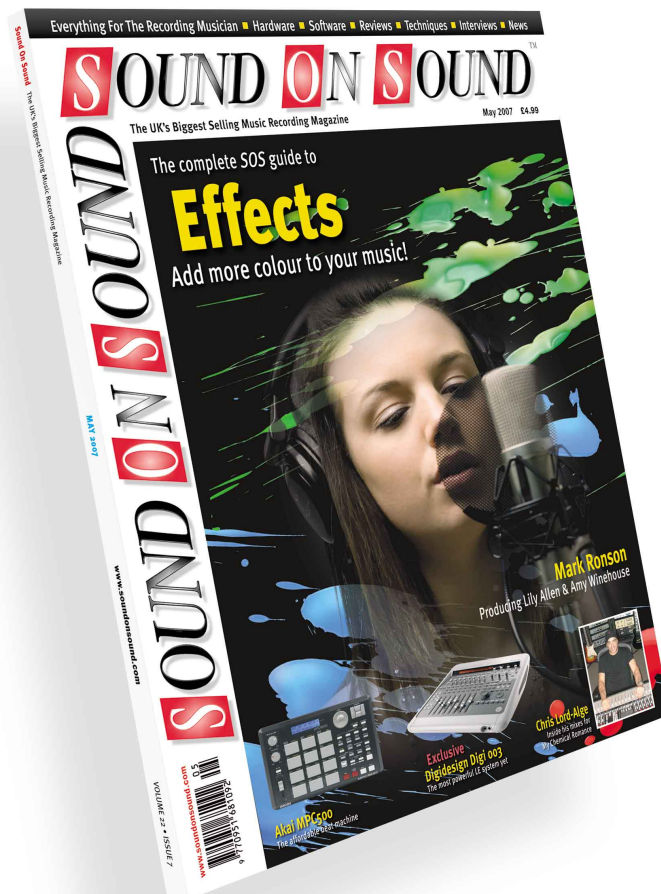
Overall, then, it seems clear that the Mackie engineers have been listening to customer feedback, and have used it to improve an already very good budget console to something that can stand proud among many high-end professional designs. **SOS**

### information

<b>£</b>	£563 including VAT.
<b>T</b>	Mackie UK +44 (0)1268 571212.
<b>F</b>	+44 (0)1268 570809.
<b>E</b>	uk@mackie.com
<b>W</b>	www.mackie.com

# SOUND ON SOUND

The World's Best Music Recording Magazine



This article was originally published in Sound On Sound magazine, **May 2007** edition.

Sound On Sound, Media House, Trafalgar Way, Bar Hill, Cambridge, CB3 8SQ, United Kingdom

Email: [subscribe@soundonsound.com](mailto:subscribe@soundonsound.com)

Tel: +44 (0) 1954 789888 Fax: +44 (0) 1954 789895

**Subscribe & Save Money!**

Visit our subscriptions page at [www.soundonsound.com/subs](http://www.soundonsound.com/subs)

All contents copyright © SOS Publications Group and/or its licensors, 1985-2006. All rights reserved.

The contents of this article are subject to worldwide copyright protection and reproduction in whole or part, whether mechanical or electronic, is expressly forbidden without the prior written consent of the Publishers. Great care has been taken to ensure accuracy in the preparation of this article but neither Sound On Sound Limited nor the publishers can be held responsible for its contents. The views expressed are those of the contributors and not necessarily those of the publishers.