

VTL TL-5.5 Series II Signature/ST-150 (£6700/£6200)

After years of sporadic distribution, one of the USA's valve amp A-listers now has a UK presence. We savour the TL5.5 Series II Signature/ST-150 pre/power combination
 Review: Ken Kessler Lab: Paul Miller

At just under £13,000, VTL's ST-150 power amplifier and TL-5.5 Series II Signature preamplifier combination represents an outlay far beyond what many would deem sane. And yet, in the scheme of things, the pair represents an 'entry-to-mid-level' purchase of sorts, both within the VTL family and the market as a whole, if one is realistic about what constitutes a high-end system.

It is, for me, a fascinating sector because – despite being out of the reach of the vast majority of consumers – the fees are a fraction of what is charged for the alleged state-of-the-art, where six-figure price tags are now common. This pair could make you reconsider the need to aspire to those fiscal heights.

VTL is firmly a part of the USA's high-end nobility, with valve electronics that compete with Audio Research, Conrad Johnson, McIntosh and all of the other be-tubed behemoths, so it's high time we had access to them in the UK. Luke Manley, the company's CEO, is aware that VTL is new to many in the UK because – until recently – the distribution has been sporadic at best. And that's a shame, because our colleagues across the Pond, in Italy and other discerning territories, love the stuff. It's easy to see why, because the equipment is beautiful... and beautifully constructed.

As regards the units' places in the VTL hierarchy, the two occupy carefully considered positions in a pricing structure that shows a logical progression. The ST-150 is the most powerful amp in its Performance Series of amplifiers, a classic push-pull Class A/B design, and is the only one in the series to use 6550s. The TL-5.5 is the only all-valve preamp in the dearer

RIGHT: VTL's high current 12AU7 line stage (with 12AT7 buffer) features 'minimal negative feedback' and software-controlled volume, balance and offset. Note the large space left for VTL's optional MM/MC phono stage

Signature line, which includes the costlier TL-6.5 and TL-7.5, but they're hybrids.

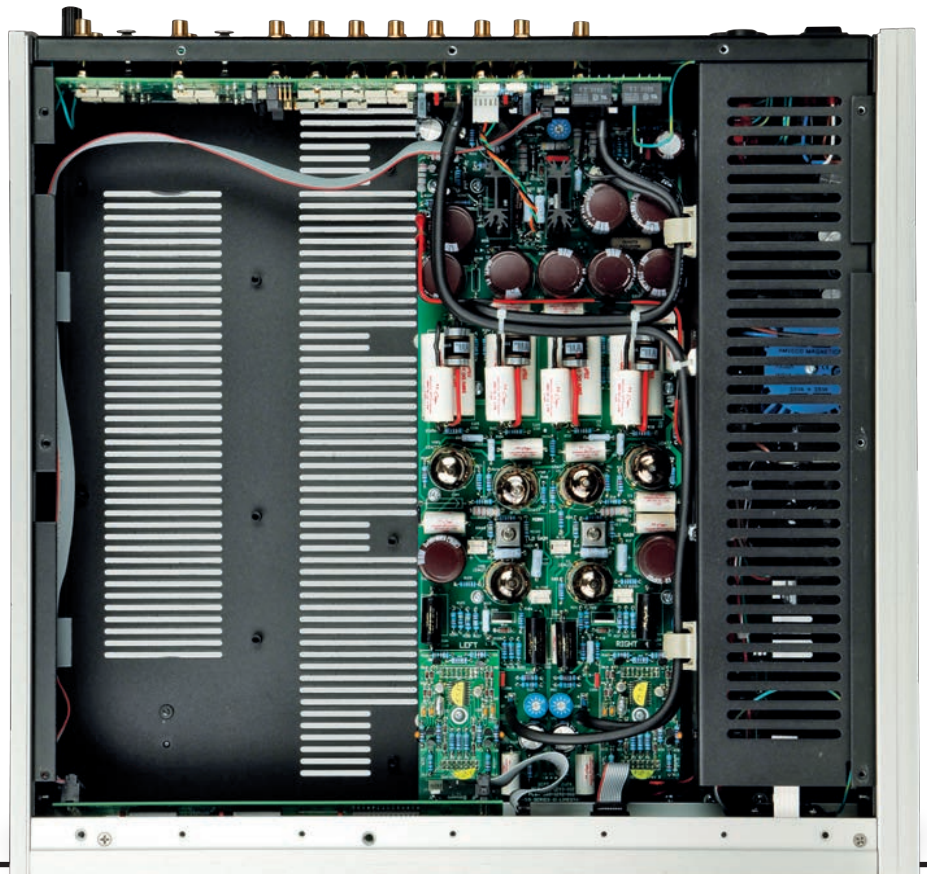
The ST-150's four 6550s per channel provide the unit with a factory rating of 2x150W [see Lab Report, p29]. The rest of the glassware includes a 12AT7 parallel input stage, 12BH7 long-tail phase splitter driver and a push-pull output stage with a stiff power supply, consisting of a solid-state rectifier and large capacitor bank.

SERIES II UPGRADES

While we have not had hands-on experience of the Series I version of the 5.5, it's worth understanding that the Series II designation does indicate a major

change and warrants explanation. The primary difference between the Series I and II 5.5 is the inclusion of features and functionality from the TL-7.5 and TL-6.5, with full remote control, including source selection, and the addition of trigger outputs and bi-directional RS-232 control for custom installations. Precision-regulated power supply design considerations from the dearer models were also applied to the Series II; the 5.5 Series I's high tension supply was not fully regulated.

Luke explains that regulated power supplies should 'give better precision to the sound. But the sonic-bottleneck breakthrough achieved in the TL-7.5





was applied to the 5.5 Series II version, insofar as the signal goes through just one potentiometer, for both volume and balance functions, and the pot is a switch/resistor type in the newer iteration, instead of the signal going through two lossy wiper-type pots as used in the Series I version of the 5.5.'

FEATURES AND PHONO OPTION

Moving to the '4-deck' volume control used in the Series II 5.5 allows it to be a fully balanced differential design, with balanced output from a single-ended input, while the Series I was not, as it had double-deck volume and balance pots. This, of course, presents the only real discontinuity between a model from the Signature range being used with one from the Performance line-up: the 5.5 offers balanced XLR outputs, but the ST-150 has single-ended

inputs. It's a mild disappointment, as I swear by balanced operation.

Our example was line-level only, but the company does offer a factory-fit or retro-fit phono stage with the same circuit and features as the standalone TP-6.5 phono amp. The other details of the 5.5 include a warm-up countdown of 90sec, phase inversion, balance, mute and a half-dozen inputs plus tape.

A vivid blue-lit display indicates the power-up countdown time, offset level of the selected input, channel balance offset, and gain level setting. All functions are accessed via buttons, with the lone conventional rotary serving the playback level. It is, it must be said, an absolute

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ABOVE: A welcome break from shoebox footprints and exposed componentry, the ST-150 shows its valves in a modernist manner

joy to use, thanks to uncommon features like a mute that lowers volume rather than silences the unit completely, choices of high or low gain, and other refinements denied to minimalists. All functions can be addressed from the beautifully-made remote, including polarity inversion.

At the back, the preamp provides single-ended inputs for each source, with balanced or single-ended inputs for CD and Aux 1. Outputs include tape, single-ended main out and XLR balanced out. All connectors are top quality, as befits a preamplifier of this calibre; it reeks – delightfully – of US high end excess.

Within the ST-150, its eight 6550Cs, two 12BH7s and two 12AT7s are all visible through the glass front panel. At the front is an on/off rocker, at the back the phono inputs and multi-way binding posts. It weighs a hefty 43kg packed, attesting to its superb build quality and the weight of its transformers.

SUPERCLEAN PREAMP

Slipped between the Musical Fidelity kW25 transport/DAC and Wilson Sophia 3s, the VTL pairing felt instantly at home. I couldn't resist swapping them around to isolate their own 'sounds', and called on the Quad II-eighty and McIntosh MC275 power amps, as well as the C2200 preamp, and was amused to learn that the two, ➔

TRIODE VERSUS TETRODE

Luke Manley, VTL's CEO, explains that the sonic differences between triode and tetrode make each more appropriate for certain types of material. 'Triode mode is less efficient, so the amp will deliver about half its power. Grid capacitance is higher, so high frequency bandwidth is reduced. Triode, therefore, isn't recommended for orchestral material where maximum power and resolution of dense sonic detail are required.'

'Triode has less high-order distortion and inherently lower output impedance because the plate resistance is much lower. Since the loop gain is lower, there is less feedback, but in triode less feedback is required for linearity and low output impedance. This creates a more lush, "classic" sound, which many listeners prefer for small ensemble and vocalist presentation.'

'Tetrode mode's dynamic sound, wider frequency response, wider soundstage image placement, and superior resolution and detail at the frequency extremes are ideal for large symphonic, rock or big band pieces. This is the mode we prefer, as it is more neutral and less-colored. VTL amps are designed for tetrode mode, with wide-band output transformers and large power supplies, to deliver wide-band performance to the frequency extremes.'

PRE/POWER AMP



while undeniably siblings with the same DNA, had their own personalities. The preamp leaned toward the superclean and analytical, while the power amp had a lushness that was present regardless of the mode in which it was used.

Because power was not an issue, I could judge triode and tetrode strictly on their sonic merits, rather than worrying about the triode's halving of the power: the Wilsons are an easy drive. There was no doubt in my mind that the tetrode performance was more accurate, more detailed, more open and more neutral, but I can understand why some would favour the added warmth of the triode mode.

As much as I have demonstrated bemused disdain for most single-ended triode amps over the decades, I do understand how some can be seduced by their colorations. They are reassuring, easy on the ears, whereas tetrodes are to music as is food that can only be appreciated by

BELOW: VTL's protracted but tube-friendly soft-start is indicated by a long countdown on the display. Each volume step is almost exactly 0.5dB (117 = +17.2dB gain; 82 = unity gain)

a sophisticated palate. And horns do need whatever taming triodes can provide. VTL is wise to include this choice of modes, but the fastidious will leave it in tetrode.

EUPHONIC OPTION

Listening to King Curtis' *Sweet Soul*, a sax-fest from 1968, the clapping in 'I Heard It Through The Grapevine', the punchy horns, his blaring sax, crisp percussion and rolling, frenetic bass presented a wall-to-wall display of varying textures that sparkled or smacked as appropriate, via the tetrode setting. In triode mode, it softened in precisely the way that the anti-valve faction used to criticise tubes *vis-à-vis* transistors. Wholly euphonic sure, but hardly authentic.

But back to the pre-vs-power dissimilarity. It is minor, and it is subtle, but it will be audible to any with a wide-range system with suitable source, speakers and ancillaries. Trying the two units with other combinations revealed exactly what I had hoped would prove to be the distributor's

ABOVE: Balanced (XLR) line inputs and pre outputs are useful, but an equivalent XLR is missing from the ST-150 power amp. Flexible MM/MC phono input is a £2900 option

reasoning for supplying models from two different sectors of the catalogue: they complemented each other to perfection, balancing and accommodating each

other's predilections.

Killer vocal groups have been occupying my listening of late, The Cardinals' (mono) doo-wop providing a perfect opportunity for focusing on the sound without being

distracted by imaging issues. Saxophone again delivered a telling moment in the break during 'The Door Is Still Open', with a fullness and richness placing it smack in the middle of the room, the rasp over the reed clearly audible after 55 years. Better still, the multi-part harmonies sounded like a group of distinct voices rather than a wash of amorphous sound – a treat repeated with The Chordettes' 'Mr Sandman'. ➔

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LAB REPORT

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Tube amps both, but there could hardly be a greater difference in 'colour' between the TL-5.5 Series II Signature preamp and the partnering ST-150 power amp. While distortion rises gently from 0.03% at 1W/8ohm to a reasonably steady 0.3-0.5% between 10-100W through the ST-150, it remains as low as 0.0005-0.001% through bass and midrange through the preamp over a 200mV-2V output. The 2-3 orders of magnitude difference between pre and power is illustrated in Graph 2, below [note Y axis scale from 0.0001-10% THD]. The TL-5.5 Series II also offers a low-ish 145ohm output impedance (balanced), +17dB gain and a hugely extended response that's flat to -0.5dB at 1Hz, -0.04dB/20kHz and -0.9dB/100kHz.

Interestingly, its A-wtd S/N ratio of 86.3dB is almost identical to the 86.4dB achieved by the ST-150, re. 0dBV and 0dBW respectively. The power amp's 1.5ohm output impedance will have greater influence over the final system response, depending on speaker load trend, but it, too, has an incredibly extended subsonic reach that's 'flat' to a near-DC 1Hz. This is extremely unusual for a transformer-coupled tube amp while the -1.7dB/100kHz top-end extension is also pretty impressive (there's a high treble boost into lower impedance loads). And power? The ST-150 meets its specification at 2x120W/8ohm in tetrode mode (about half this in triode mode) and delivers a full 2x170W/4ohm if the THD limit is relaxed from 1% to 2%. A maximum dynamic output of 220W is possible into 2ohm [see Graph 1, below], so the ST-150 is no slouch. Readers can view comprehensive QC Suite test reports for VTL's TL-5.5 II preamp and ST-150 power amp by navigating to www.hifinews.co.uk and clicking on the red 'download' button. PM



ABOVE: While the push-pull 6550C-based output stage can be switched between tetrode and triode operation [see boxout p25], the speaker outputs are single-tapped

Moving to the gorgeous recording of 'The Worst That Could Happen', by Johnny Maestro and The Brooklyn Bridge, the system was challenged by wide stereo, a brassy orchestra, five-part harmonies and – joy of joys – a cheesy, Farfisa-ish organ swirl to add pathos. Unashamedly, the VTLs caress vocals with the same candour that they offered the greatest sax player of all time, King Curtis in all his glory.

As I have already said, power wasn't an issue in either mode, Luke *had* pointed out [see boxout on page 25] that tetrode was to be preferred over triode when power was needed – literally or metaphorically. To that end, I summoned the crotch rock of Bad Company and played it loudly enough to tax the Sophias. Triode barely cut it, but tetrode offered the hammer of Thor.

FEEL THE FORCE

Leaving aside the technical meaning of 'power' in a hi-fi context, that is, the ability of the amplifier to drive the speakers to impressive levels, the other, less concrete usage applies to the sensation of force from the music itself. 'Can't Get Enough' kicks off with relentless, see-if-I-can-destroy-my-kit drumming, and it *surges* from the speakers if the dynamic capabilities of the system as a whole can handle it.

Every kick, the stretching of the heads, the snap of the sticks – this is indeed visceral sound. VTL has delivered a package that can segue seamlessly from the sweet

harmonies of a doo-wop quintet to the in-your-face slam of power rock. Halfway between them is David Lee Roth's amusing EP of covers, *Crazy From The Heat*, with a faithful rendition of Louis Prima's 'Just A Gigolo'. Its drumming sounds like that of Bad Company's Simon Kirke, Roth's raspy vocals fronting a glossy bog band *à la* Prima.

The VTLs excelled at replicating the echo at 1m 54s when the music stops and the singing continues. The chiming that opens 'California Girls' tinkles with a crystalline charm, the organ rings like a bell, while some chunky guitar work underpins it all. The coherence is as convincing as, well, reality.

Complaints? The lack of a balanced input for the ST-150 is the only one I can muster. If the sound has to be categorised, it errs on the side of hygienic. But then there's always the switch to triode mode if you wanna get warm'n'fuzzy. There will be times when you might want to wallow in lushness. What the setting does for Doris Day's or Nat 'King' Cole's 1950s Capitol recordings will turn you to mush. ☺

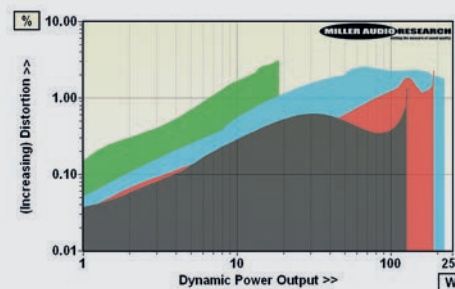
HI-FI NEWS VERDICT

What made this pair so easy to review is their perfect synergy. Yes, I would have liked balanced inputs on the ST-150, but VTL isn't the only brand that – weirdly – supplies preamps with XLRs and single-ended-input-only matching amps. What matters is the sheer silky naturalness of the sound, matched by the authority one demands of units costing far more. Robust yet refined, well-built – this is pure class.

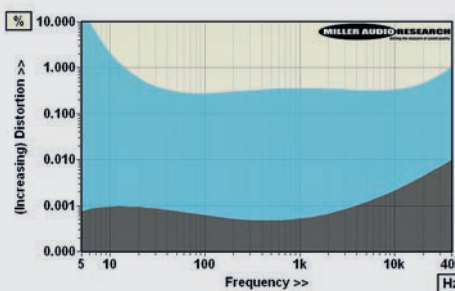
Sound Quality: 85%



ABOVE: Remote control over IC-based volume, balance and input selection



ABOVE: Dynamic power output versus distortion into 8ohm (black trace), 4ohm (red), 2ohm (blue) and 1ohm (green) speaker loads



ABOVE: Distortion vs. extended frequency, preamp (0dBV, black) and power amp (10W/8ohm, blue)

HI-FI NEWS SPECIFICATIONS

Power output (<1% THD, 8/4ohm)	120W / 50W (170W, 2% THD)
Dynamic power (<1% THD, 8/4/2/1ohm)	125W/190W (2%) / 220W/19W (3%)
Output impedance (20Hz-20kHz)	1.53-1.46ohm (145-170ohm, pre)
Freq resp. (20Hz-100kHz, pre/power)	+0dB to -0.9dB/+0.0dB to -1.8dB
Input sensitivity (for 0dBV/120W)	137mV (balanced in) / 1020mV
A-wtd S/N ratio (pre/power)	86.3dB / 86.4dB (re. 0dBV/0dBW)
Distortion (20Hz-20kHz, pre/power)	0.0003-0.003%/0.28%-0.48% (10W)
Power consumption (Idle/Rated o/p)	270W/610W (preamp, 50W)
Dimensions (WHD, pre/power)	483x102x381/480x230x260mm