

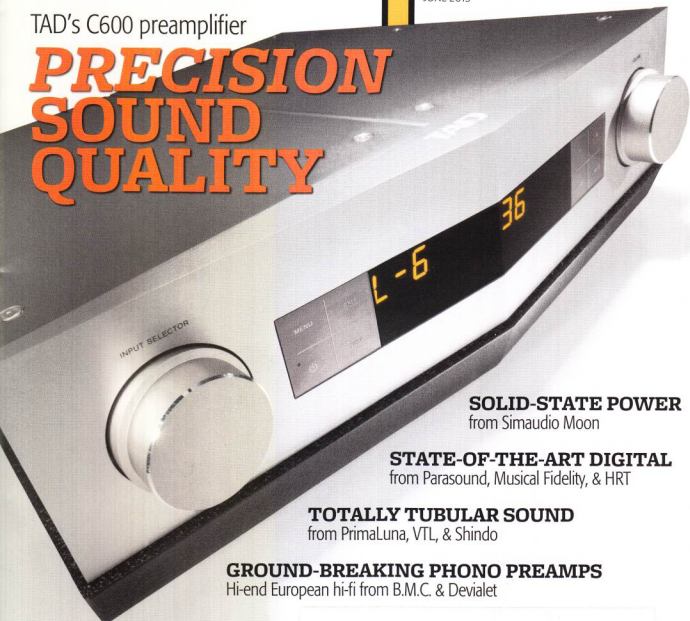
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JUNE 2013

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ROBERT J. REINA

# VTL TL-5.5 Series II Signature

## LINE PREAMPLIFIER



As I've lately had the pleasure of reviewing some impressive tubed components, I asked myself why I hadn't ever reviewed anything from VTL Amplifiers. My history with VTL goes back to the 1986 Consumer Electronics Show in Chicago (wouldn't it be great if CES returned to that city?), where Vacuum Tube Logic cofounder Luke Manley and his father, the late David Manley, made a big splash with David's preamps and amplifiers. To publicize the fact that amps were designed and made in Britain, the Manleys wore the cheesiest Union Jack T-shirts I'd ever seen—the kind they sell in those cheap tourist traps in Piccadilly Circus. When I recently ribbed Luke

about those shirts, he admitted that "They fell apart as soon as we returned home." I told him that I hoped his products were more rugged.

The big splash about the VTL gear demonstrated in Chicago almost 30 years ago was that while I'd expected to hear the silky, luscious liquidity I normally associate with tubed components, these had amazingly low coloration and deep, solid, tight, forceful bass. These characteristics aren't uncommon in today's tubed products, but were very unusual in 1986, even in the most expensive models. Since then I've attended many more audio shows, and it seems to me that, of those manufacturers that don't make tubed gear themselves, more

### SPECIFICATIONS

**Description** Tubed line preamplifier with optional phono stage. Tube complement: two 12AU7/ECC82, four 12AT7/ECC81. Inputs: 2 pairs, balanced (XLR) or RCA (single-ended); 6 pairs, single-ended (RCA). Outputs: 1 pair balanced, 1 pair single-ended (RCA), 1 pair single-ended buffered

Record (RCA). Frequency response: 1Hz–200kHz, +0/-1dB. Normal voltage gain: 11dB single-ended, 17dB balanced. Low voltage gain: 6dB single-ended, 11dB balanced. Output impedance: 150 ohms (maximum 400 ohms at 10Hz). Input impedance: 35k ohms. Maximum output voltage:

30V, 10Hz–200kHz, at <1% THD; 1.75V into 600 ohms at 1% THD. Channel separation: >100dB at 1kHz (>80dB at 20kHz).

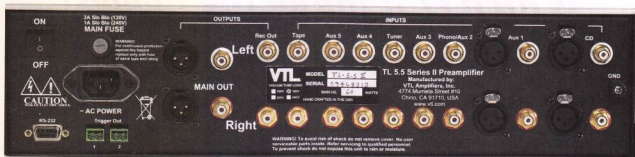
**Dimensions** 17.5" (445mm) W by 17" (432mm) D by 4.6" (117mm) H. Weight: 30 lbs (13.6kg).

**Serial number of unit reviewed** 12489199.

**Price** \$7000; optional phono stage, \$2500. Approximate number of dealers: 37.

**Manufacturer** VTL Amplifiers, 4774 Murrieta Street, Unit 10, Chino, CA 91710. Tel: (909) 627-5944. Fax: (909) 627-6988.

[www.vtl.com](http://www.vtl.com).



The first two inputs (right) can be switched between balanced and single-ended by pressing and holding their input-select buttons.

demo with VTL amps than with any other brand of tubed electronics. VTL must be doing something right.

The TL-5.5 Series II Signature preamplifier is VTL's most expensive all-tube preamplifier (\$7000, or \$9500 with integral tubed phono stage), and it's the latest version of the original TL-5.5, which Chip Stern reviewed for *Stereophile* in November 2002 (see [www.stereophile.com/tubepreamps/717/index.html](http://www.stereophile.com/tubepreamps/717/index.html)).

### Design

The TL-5.5 Series II Signature retains the basic all-tube circuit topology of the original TL-5.5 with a lower-gain, high-current 12AU7 tube circuit, a 12AT7 tube buffer, minimal negative feedback, and a low-impedance output stage. The TL-5.5 II also features a new, precision-regulated power supply trickled down from VTL's flagship TL-75 Reference hybrid preamplifier. Moreover, as the original TL-5.5 used a standard resistive potentiometer as its volume control, the Signature II has a 117-step, chip-based differential volume control, with a 3-digit display. The new version of the TL-5.5 operates in fully balanced mode from input to output. The TL-5.5 II has two pairs of inputs that can be operated in either balanced mode (XLR) or single-ended mode (RCA), as well as six additional

single-ended RCA inputs. There are three pairs of outputs, one each of balanced (XLR), single-ended (RCA), and single-ended Record (RCA). The preamp can be switched between Normal and Low gain (I listened at the Low setting), and has two programmable trigger outputs. Also included is an RS-232 connector, to enable the preamp to be remotely controlled.

The TL-5.5 II's own remote has more functions than any non-home-theater remote I've seen: Power, Source Select, Volume, Mute, Balance, and Invert Phase. All of these are also accessible on the attractive front panel, which displays the volume level in increments of 1dB. The optional phono stage is a hybrid design (parallel JFETs and 12AU7 tubes) originally developed for the more expensive TL-6.5 preamplifier. The sample I received didn't include the phono stage; my auditioning comments here refer to only the line stage. For LP playback, I used the Vendetta phono stage.

### Listening

The VTL's midrange—voluptuously rich, detailed, and liquid—made it a natural match for well-recorded voices. My favorite Beatles recording of solo voice, musically and sonically, is John Lennon's soulful rendition of Arthur Alexander's "Anna (Go to

## MEASUREMENTS

I measured the TL-5.5 Series II Signature's electrical performance with *Stereophile*'s loan sample of the top-of-the-line Audio Precision SYS2722 system (see [www.ap.com](http://www.ap.com) and the January 2008 "As We See It," <http://tinyurl.com/4fppve4>). No phono stage was fitted. I made sure that the VTL's inputs were correctly set for balanced (blue LED illuminated) or unbalanced (green LED illuminated) operation. As used by Bob Reina, the two toggle switches inside the TL-5.5 II, one for each channel, were set to Low Gain. The maximum gain for balanced input, balanced output with the volume control set to its maximum of "117" was 9.4dB, which is slightly less than the 11dB specified for the VTL's Low Gain mode. The maximum single-ended input/output gain was 6dB lower, as expected, at 3.4dB. With the switches set to Normal Gain, the maximum gain was now 17.5dB for balanced and 11.5dB for single-ended

operation, both figures 0.5dB higher than specified. Other than the very top step, from "116" to "117," the volume control operated in accurate 0.5dB steps.

At low and middle frequencies, the single-ended input impedance was almost to spec, at 33k ohms, dropping inconspicuously to 29k ohms at the top of the audioband. The balanced impedance was the same for each signal phase, meaning

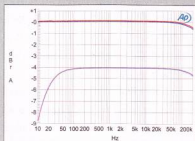
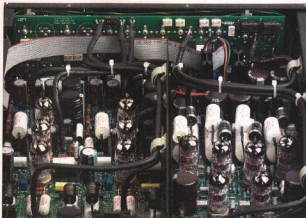


Fig.1 VTL TL-5.5 II, balanced frequency response with volume control set to "117" at 1V, into: 100k ohms (left channel blue, right red), 600 ohms (left cyan, magenta right) (1dB/vertical div.).

that it was twice the single-ended impedance overall. All inputs preserved absolute polarity (ie, were non-inverting) with the red Phase LED off. The VTL's output impedance was slightly higher than the specified 150 ohms, at 200 ohms single-ended and 376 ohms balanced in the midrange and above. The audible difference between the specified and measured impedances will be inconsequential. By 20Hz the impedance had risen to 273 ohms single-ended and 576 ohms balanced, presumably due to the presence of output coupling capacitors. As a result, when the TL-5.5 II was used to drive the very low 600 ohm test load (fig.1, cyan and magenta traces), the low frequencies rolled off below 50Hz to reach -3dB at 14Hz. Into the high 100k ohms load (fig.1, blue and red traces) the response was flat in the audioband, and down by just 0.5dB at 200kHz. Note, also, the superb channel matching in this graph. Commendably, the frequency



The optional tubed phono stage fits next to the line-stage circuit board.

Him),” from *Please Please Me* (CD, Parlophone). The TL-5.5 II brought out every low-level dynamic nuance in Lennon’s vocal style; even his raspy upper register was bathed in a golden glow.

The VTL’s midrange, however, was revealing and uncolored enough to differentiate among the sound qualities of various recordings. Jennifer Kimball’s forceful yet delicate alto on *Oh Hear Us* (CD, Epoise 786851 1092 29) was much more realistic and involving than the slightly edgy-sounding Sarah Vaughan on *The Divine Sarah* (CD, Blue Nite Records BN050). But the best vocal recording wasn’t a vocal recording at all. Olivier Messiaen was a fan of the Ondes Martenot, an electronic synthesizer from the early 20th century that has a cameo role in his *Turangalila Symphony*. In his *Fête des Belles Eaux*, Messiaen puts the instrument in

a solo role within a chamber sextet. On the LP (Erato LDS 3202), this unique instrument sounds like a cross between a woman’s voice and the purest woodwind you’ve ever heard. Through the VTL, the phrasing, delicacy, and dynamics of the Ondes Martenot were mesmerizing.

The integration of the VTL’s midrange with its delicate and uncolored highs made it a good match for well-recorded guitars. Bill Frisell plays a wide range of acoustic and electric instruments on his solo album *Ghost Town* (CD, Nonesuch 79583-2), and through the VTL each had a perfect integration of mid- and high-frequency timbres, for a rich, airy sound. The low end of the TL-5.5 II’s frequency range was one of its strengths: all acoustic, electric, and electronic bass instruments sounded deep, punchy, clean, uncolored, and dynamic. Although for the past 20 years Bill Laswell has been best known as a music producer, I’m more a fan of Laswell the bassist. He can pull a wider range of timbral textures from a Fender bass than any other human being, but his live performances are infrequent. I had to travel to London to hear his New York-based band, Material, perform in the early 1980s at, of all places, an S&M club (the gift shop was interesting). My favorite of Laswell’s bands is Massacre, a free-form power trio with Fred Frith who trades in his bass guitar for a Gibson ES-335 guitar and a Marshall amplifier stack) and drummer Charles Hayward. (I did see this band perform in New York early in the century, but they’d unfortunately added John Zorn on alto sax, and despite my worship of Zorn’s compositions, I felt his work as a saxophonist interfered with the ability of the other three to create space and drama.) When I played Massacre’s *Meltdown* (CD, Tzadik TZ-7606), Laswell’s axe thundered through my listening room with the VTL, yet I was still able to discern his subtle fingering technique and tasteful use of the occasional electronic effect. Drummer Hayward was also kicking and forceful, and the VTL had

#### measurements, continued

response was unaffected by the volume-control setting.

Channel separation (not shown) was excellent at >100dB below 1kHz, but decreased to 76dB in both directions at 20kHz. The unweighted, wideband signal/noise ratio, ref. 1V output with the input shorted and the volume control set to “117,” was 76.3dB left and 79dB right, which are good if not great. These

figures improved to 98.8 and 104.2dB, respectively, when an A-weighting filter was switched into circuit. Fig. 2 reveals a little more random noise in the left channel (blue trace), though the right channel also shows some very low-level harmonics of the supply frequency.

Fig. 3 plots the percentage of THD+noise against the balanced output voltage into 100k ohms in Low Gain

mode. The rising trend below 1.5V suggests that the distortion is buried below the noise at these output levels. (The noise, being constant in level, becomes an increasingly large percentage of the output voltage as the latter decreases.) The distortion rises above 2V output, but the TL-5.5 II doesn’t actually clip until the output reaches 20V—more than five times the voltage required to drive

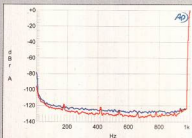


Fig. 2 VTL TL-5.5 II, balanced spectrum of 1kHz sine wave, DC-1kHz, at 2V into 100k ohms (left channel blue, right red; linear frequency scale).

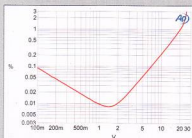


Fig. 3 VTL TL-5.5 II, balanced distortion (%) vs 1kHz output voltage into 100k ohms.

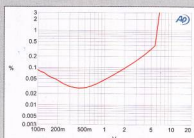


Fig. 4 VTL TL-5.5 II, unbalanced distortion (%) vs 1kHz output voltage into 10k ohms.

## ASSOCIATED EQUIPMENT

**Analog Sources** Rega Research Planar 3, VPI TNT IV turntables; Immedia, Syrinx PU-3 tonearms; Clearaudio Virtuoso Wood, Koetsu Urushi cartridges.

**Digital Sources** Creek Destiny, Lector CDP-7T CD players.

**Preamplification** Vendetta Research SCP-2D phono stage; Audio Research Reference 55E, Audio Valve Eclipse, Audio Nagra Jazz line stages.

**Power Amplifiers** Audio Research Reference 75 & Reference 110.

**Loudspeakers** Epos M16i, Monitor Audio Silver RS6, Nola Viper Reference III.

**Cables** Interconnect (all MIT): Magnum M3, MI-3305G Terminator, MI-350 CVTwin Terminator. Speaker: Accent Speaker Technology Blue Thunder. AC: manufacturer's own.

**Accessories** Various by ASC, Bright Star, Celestion, Echo Busters, Salamander Designs, Simply Physics, Sound Anchor, VPI.—Robert J. Reina

no problem differentiating between the kick drum and Laswell's stringed machinations.

*Panthalassa: The Music of Miles Davis 1969–1974*, Laswell's brilliant remixing of Miles Davis's recordings (CD, Columbia CK 67909), layers groove and detail. The VTL's resolution was such that I could imagine myself at the mixing board, visualizing every step of Laswell's innovative DJ machinations. The preamp also made it easy to analyze the techniques of piano virtuosos. I played through much of my Van Cliburn collection in honor of his recent death. With recordings both solo (*My Favorite Chopin*; LP, RCA Living Stereo LSC-2576) and with orchestra (Rachmaninoff's Piano Concerto 3 at Carnegie Hall, with Kiril Kondrashin and the Symphony

of the Air; LP, RCA Living Stereo LSC-2355), the VTL revealed the master's chops to be clean, crisp, uniform, airy, and dynamic. David Chesky's technically challenging *New York Rags*, for solo piano (CD, Chesky JD359), is a hoot that combines classical and jazz textures in a quirky collection of very short pieces that barely follow rag form. Through the VTL, Chesky's rapid-fire passages were cleanly executed, with a noticeable bed of air between notes.

The TL-5.5 II's excellent ability to articulate transients was evident with a broad range of recordings. Iannis Xenakis's *Akerata*, with Lukas Foss conducting the Buffalo Philharmonic (LP, Nonesuch H-71201), includes a passage in which tutti brass play a series of repeated rapid-fire notes. Through the VTL, each note was distinct, with no sense of smear, and I could hear each one decay. In John Tilbury's recording of John Cage's *Sonatas and Interludes for Prepared Piano* (LP, Decca Head 9), all percussive textures were delicate, fast, and airy. I even enjoyed listening deeply into George Martin's execution of his faux-harpsichord solo (it's actually an upright piano played back at double speed, and thus an octave higher) in "In My Life," from the Beatles' *Rubber Soul* (CD, Parlophone PMC 1267), which sounded clear and clean through the VTL.

The VTL's ability to deliver dramatic, high-level fortissimos made it an excellent match for orchestral war horses, such as Paul Paray conducting the Detroit Symphony in Berlioz's *Symphonic Fantastique* (CD, Mercury Living Presence 434 328-2). With certain orchestral recordings, however, such as Howard Hanson conducting the Eastman-Rochester Orchestra in his own *The Composer and the Orchestra* (CD, Mercury Living Presence 434 371-2), I did feel that there was a bit of tension and forwardness in the most highly modulated passages—as if the TL-5.5 II had to work hard to reproduce every last ounce of bombast. However, at the opposite end of the dynamic spectrum, the VTL revealed

## measurements, continued

power amplifiers into clipping. The balanced output clips at 1.2V into 60 ohms (not shown), strongly suggesting that the TL-5.5 II not be used with loads that low. Fig.4 is a similar analysis performed from the single-ended output into 10k ohms, probably the lowest impedance the VTL would see in practical use. The distortion is a little higher, though not to any extent that would cause alarm, and the output now clips at 6.2V. This is still

higher than would ever be required to drive a power amplifier into clipping.

That the TL-5.5 II is incompatible with low impedances is confirmed by fig.5, which shows that while the THD+N percentage in the balanced output doesn't change with frequency into 100k ohms, and is very low, at <0.01%, it rises to almost 1% into 600 ohms. The distortion itself comprises almost entirely the subjectively innocuous second and third

harmonics into high impedances (fig.6), and intermodulation distortion is similarly low (fig.7)—although this graph, too, shows the slightly higher level of noise in the left channel.

VTL's TL-5.5 Series II Signature is a nicely engineered preamplifier that offers no measured compromise resulting from its use of tubes, other than its inability to drive unrealistically low load impedances.—John Atkinson

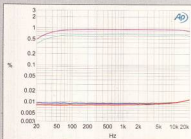


Fig.5 VTL TL-5.5 II, balanced THD+N (%) vs frequency at 1V into: 100k ohms (left channel blue, right red), 600 ohms (left cyan, right magenta).

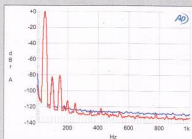


Fig.6 VTL TL-5.5 II, balanced spectrum of 50Hz sine wave, DC-1k Hz, at 2V into 100k ohms (left channel blue, right red; linear frequency scale).

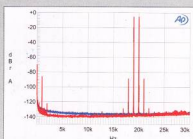


Fig.7 VTL TL-5.5 II, balanced HF intermodulation spectrum, DC-30kHz, 19+20kHz at 2V peak into 100k ohms (left channel blue, right red; linear frequency scale).

every inner detail, subtle instrumental phrasing, and sense of air and space in Witold Rowicki's recording, with the Symphony Orchestra of the National Philharmonic Warsaw, of Lutoslawski's Concerto for Orchestra (LP, Philips 6500628).

**The VTL has a detailed, liquid, uncolored sound, a wide dynamic range that mirrors that of live music**

I've been preparing for a live recording gig in May in New York City at which my jazz quartet, Attention Screen, rather than our usual free improvisation, will perform original jazz and classical works. Instead of my usual piano, I'll play the recently refurbished Ralph and Alice Greenlaw Organ, a 1928 Austin instrument completely rebuilt by Peragallo in 2010. To get in the mood, I dug out my favorite Keith Jarrett recording, *Invocations/The Moth and the Flame* (LP, ECM 1201/02), in which Jarrett improvises on a pipe organ at Ottobeuren Abbey, in Bavaria, then overdubs himself playing soprano sax in the same space. The sense of

space in the huge sanctuary was captured perfectly by the VTL. From my notes: "the air, the drama, the organ!"

Finally, a series of jazz piano-trio recordings let me hear the TL-5.5 II's ability to portray a coherent sense of rhythmic unity. I worked my way through several discs of *The Complete Blue Note Recordings* of pianist Herbie Nichols (CD, Blue Note CDP 8 5932 2), and found myself tapping my feet and swinging my knees to Nichols's up-tempo grooving.

#### Comparisons

I compared the VTL TL-5.5 Series II Signature (\$7000) with three other line stages: my own Audio Valve Eclipse (\$5799), and the Nagra Jazz (\$12,250) and Audio Research Reference 5SE (\$14,000).

The Audio Valve Eclipse revealed more inner detail, decay, and ambience in the midrange, though its midrange was more forward than the VTL's. The Eclipse's highs also seemed more extended and airy. Although both preamps excelled at bass definition and high-level dynamics, the Audio Valve sounded more relaxed with the latter, and did not exhibit any sense of tension in highly modulated passages.

The Nagra Jazz resolved even more inner detail and retrieved more ambience than the VTL or the Audio Valve, with even greater senses of high-frequency purity and clarity. However, the TL-5.5 II was more forceful and extended at the extreme low end.

ARC's Reference 5SE produced the greatest sense of space, with even more resolution of detail and superior articulation of transients. The ARC was also the best at articulating low-level dynamics. However, the VTL TL-5.5 II had a more forceful midbass in high-level dynamic passages.

#### Summing Up

VTL Amplifiers has produced a winner. The TL-5.5 Series II Signature has a detailed, liquid, uncolored sound, a wide dynamic range that mirrors that of live music, rugged construction, and a long list of features—in short, a good value for the price. I'm sorry I waited so long to review a VTL product. ■

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