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TP-6.5 Series II Signature Phono Preamplifier

The **TP-6.5 Series II Signature Phono Preamplifier** is a major update and improvement to the TP-6.5 Signature Phono stage. Its upgrades include circuit enhancements originally developed for the acclaimed TL-7.5 Series III Reference Preamplifier, as well as newly designed, more robust power storage for the active MC stage.

The original TP-6.5 Phono preamplifier complemented the top of the line VTL TL-6.5 and TL7.5 Linestage Preamplifiers, matching them in sonic performance, user interface and cosmetics. The new TP-6.5II pushes the analog envelope even further, utilizing the latest innovations from VTL. The result is a phono stage that substantially improves upon the performance of its predecessor.

The phono stage employs hybrid JFET/tube circuitry for quiet operation, multiple low-noise cascaded regulators and shielded power supplies for increased dynamics, accurate 4-corner passive RIAA equalization and 68dB of gain from the balanced outputs, all in a single chassis unit. A wide selection of load and gain settings as well as other input functions are easily accessible via both front panel and remote control.

One of the design breakthroughs in the TP-6.5 II is the use of the shunt regulator in the power supply, which offers superior regulation and ripple rejection and minimizes the sonic impact on the audio signal due to lowered amplification in the regulator. The result is a noticeable lowering of background noise contributing to stability and better delineation of midrange and midbass. There is more air around the voices, more finesse, extension, and nuances – giving an overall more lifelike impression. Especially noticeable improvement in the active MC Stage is its speed and dynamics.

Further improvement in the TP-6.5 Series II comes from the implementation of massive low impedance power supply storage in the active MC stage, fed by multiple cascaded regulators and capacitance multiplier circuits. The resulting rigid, low impedance power supplies prevent power supply ripple and other noise from affecting the sensitive MC signal. The new gel capacitor technology, which offers dramatically higher capacitance in much smaller packages, is key to the breakthrough in the TP6.5 II's

active MC stage directly contributing to its remarkable lower noise level and ability to handle very low output cartridges.

The TP-6.5II also offers a high quality transformer Moving Coil step up option, both to offer a low-noise MC step up, and a second MC stage. This second MC input replaces the original MM input that is normally standard in the TP6.5 Phono Stage, and uses the existing MM input to provide access to the transformer MC step up.

The addition of the step up transformer allows both for appropriate loading for very low-output cartridges, and the flexibility of handling different cartridges with different step up methods, as in some cases certain cartridges can sound substantially better with transformers than they do with active gain stages. The transformer also allows the cartridge to be loaded via the transformer, instead of via the loading resistor, retaining as much of the signal available from these cartridges as possible.

Switching between the inputs is done only after the signal has been amplified, avoiding signal losses inherent in switching the fragile MC signal straight from the cartridge.

This option offers the maximum MC cartridge handling flexibility, and also accommodates multiple arms and multiple MC cartridges, as both inputs can be connected simultaneously.

TP-6.5 Signature Phono Stage

Functionality features:

- Full front panel functionality:
  - Input selection
  - MC Gain adjust: 5 steps of 6dB: 44dB, 50dB, 56dB, 62dB, 68dB
  - MC Step Up Option Gain: 65 dB balanced output, 59 dB single-ended output
  - Load setting: MC: 100, 250, 470, 1K, 2.5K, 4.7K, 47K and User Defined, and MM – 10k, 22k, 47k and User Defined.
  - Load setting for MC Step Up: 47, 100, 470, 1.0K Ohms
  - Mono switch
  - Phase flip, absolute, and channel to channel
  - RIAA select, for Enhanced RIAA and Rumble cut
  - Mute
- Remote controllable Power, Input select, Mute, Phase reverse, Rumble cut, Mono, Gain, Cartridge Load

Circuit Features:

- 2 single ended inputs, with discrete load settings for each input
- Single-ended and Balanced outputs, with 68dB total gain balanced
- Active Hybrid low noise J-FET driving high current 12AU7 MC gain stage for highest resolution of small signal levels
- All high fidelity tubes: 12AU7, 12AX7, 12AT7, all operating in linear range
- Accurate 4-corner passive RIAA filter, with split pole for greater accuracy
- Zero loop feedback
- Gain trims for accurate channel to channel balance
- Signature and Reference-level coupling capacitors
- Shock mounted gain stages for resistance to vibration interference
- Extensive RF filtering on AC path
- Switchable RF filtering on both inputs.
- Low radiation UI core power transformers, with dual mono supplies, and separate logic supply
- Dual mono multiple cascaded precision-regulated and shielded power supplies for low noise, with film bypass for high frequency performance
- High quality transformer MC step up option for low noise and excellent match to low-output MC cartridges
- Quiet sleep mode on processor when not in use
- Quiet 7-segment LED display on the front panel (for gain and load display)

Physical features:

- Rigid braced steel and aluminum chassis for EMI, RF, and hum shielding with minimal interference from vibration
- All noisy components steel shielded for low RF and hum radiation.
- Additional steel shielding on amplifier section for lowest noise

TP-6.5II Phono Preamplifier Data Specifications

	MC	MM	MC StepUp
Gain (Total 62dB single ended, 68dB balanced)	Selectable 50,56,62 or 68dB	35 dB single ended, 40 dB balanced	65dB
Selectable Cartridge load	100, 250, 470, 1K, 2.5K, 4.7K, 47K Ohms, User Defined	10K, 22K, 47K, User Defined	100Ω, 470Ω, 1kΩ
Signal to Noise Ratio	50 dB	56 dB	
Minimum Recommended Cartridge Output	0.2 mV	1.5 mV	
Vacuum Tube Complement	2 x 12AU7	2 x 12AX7 (2 x 12AT7 phase splitter, 2 x 12AT7 output buffer)	
Inputs	1 pair single-ended RCA	1 pair single-ended RCA	
Outputs	1 pair single-ended RCA, 1 pair Balanced XLR		
Remote Control Functions	Power MC/MM Source Select Gain up/down Mute Rumble Load Mono Phase		
Output Impedance	150Ω		
Frequency Response +0 -1 dB	1 Hz - 100KHz		
Maximum Output Voltage <1% THD	10VRMS@1KHz (10K ohm load)		
Channel Separation	>70 dB @ 1KHz (>65 dB @ 20kHz)		
Power Consumption	80W		
Dimensions W x D x H	17.5 x 17.5 x 4.75 inches 44.45 x 44.45 x 12.06 cm		
Weight	50 lbs (22.72 kg) packed		