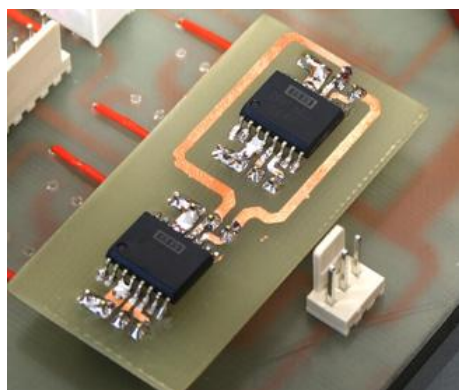


## **INVINCIBLE Customizable Preamplifier with highest audio quality built around the best vacuum tube circuit and the best audio grade parts.**



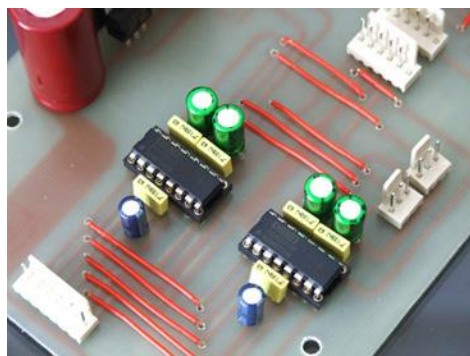
The SILK Invincible Preamplifier has been carefully combined the greatest quality of yesterday's vacuum tube technology with the best available technology of today whilst having almost unlimited upgrade capability for the future. The backbone of the SILK Invincible Preamplifier consists of the highest performance professional broadcasting quality of Burr-Brown digitally controlled Analogue Volume Control working together with special configuration of Vacuum Tube



Buffer stage. Unlike any other digital volume control format, the Invincible Preamplifier is taking full advantage of superior analogue characteristics of passive (analogue) volume element that is fabricated from a mixed-signal BiCMOS Integrated Circuit (IC). This translates into a precision matched resistive network array to form an attenuator (volume control). The means of selecting the volume level is performed by digitally controlled switches via 16 bit serial interface resulting in one of the shortest signal paths of any passive volume control. This yields exceptional signal integrity

(THD of less than 0.0002%), low crosstalk between channel (-130dBFS), and excellent dynamic range (120dB). The best part is that all these great performance are attained at all volume level. (other passive volume control's performance vary considerably with changes in volume control).

While the excellent quality of the volume control may make up a complete preamplifier by itself, SILK Invincible Preamplifier is taking new approach to integrate Pure Class-A Vacuum Tube Buffer Stage with premium grade NOS Russian 6N1P vacuum tube into its signal path to provide better impedance transition, filter out all nasty high harmonic distortion and improve dynamic headroom. Unlike most vacuum tube preamplifier, The Invincible's special Vacuum Tube circuit employs ZERO global negative feedback topology yet keeping the total harmonic distortion to within 0.01% at maximum output level from 20Hz to 20,000Hz to produce very truthful music reproduction with lowest coloration from all sources. Extraordinary frequency bandwidth is one of the greatest properties of the SILK Invincible Preamplifier. Its frequency response is extremely linear at all volume level with deviation of less than 0.05dB from 20Hz to 20,000Hz, while maximum frequency bandwidth is extend beyond 1MHz (1,000,000Hz at -3.0dB



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The SILK Invincible Preamplifier utilizes Burr-Brown digitally-controlled Analogue Volume Control (PGA2311PA). For Premium Balanced version SILK Invincible Preamplifier also utilizes Burr-Brown Balanced convertor to convert all RCA inputs into true balanced signal.



**Remote Control**



**There are 2 versions of the SILK Invincible Preamplifier available.**

- 1) Basic Unbalanced circuit with 4 RCA input and 1 RCA output connector.
- 2) Premium Balanced circuit with 1 XLR input 3 RCA input, 1 XLR output and 1 RCA output.



Basic version matches well with various sources (like CD, DVD, Tuner or Turntable) and amplifier with only RCA input/output.

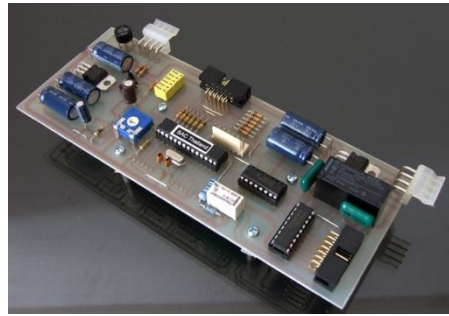


Premium version offers true versatility in today and tomorrow requirement as more and more high quality source and power amplifier are equipped with XLR connector. Professional audio has XLR as standard for signal transmission since it offers better protection for noise and interference. This version has unique feature that it converts all unbalance signal from all RCA input into true balanced signal (XLR) before entering the main preamplifier circuit thus making this Invincible Preamplifier the true balance in all input. Conversion from RCA to XLR is done via highest quality Burr Brown device usually found only in highest professional audio equipment. Since the conversion circuit processes very low distortion (THD of 0.0005%) and high slew rate (+15V/uS), your regular sources with RCA output are transferred into high performance true balanced signal within SILK Invincible Preamplifier.

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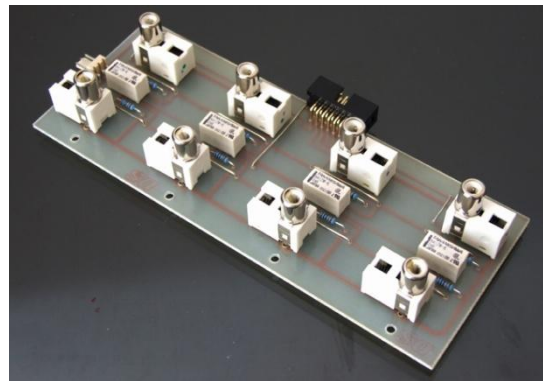
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SILK Invincible layouts in modular section design which enable easy upgradable paths for future options. Each separate section has been heavily shielded from each other to minimize digital/analog mixed up. The power supply section is carefully design and implement to the perfection. There are up to 3 separated power transformers (1 for digital circuit, 1 for vacuum tube buffer stage, and 1 for optional transformer or DC choke for future upgrade) that give absolute intermodulation free between digital and analog domain. This transformer separation alone brings up the quality of the Invincible Preamplifier to the unparalleled performance. All transformers are carefully handwound, shielded and potted in additional shield casing to prevent any stray magnetic leakage into any part of the circuit. Only highest quality power supply parts are used throughout the circuit to increase reliability and sonic performance.

The brain of the SILK Invincible Preamplifier is Digital & Logic control and LCD display board which located in front section of the chassis, shielded away from the rest of the circuit. Volume and selector change are done through high quality rotary encoders which offer smooth action and no mechanical wear like conventional selectors or volume control, hence there is no sonic degradation for extended period of operation. Upon power up of the system, the volume control knob also serves as special hour meter function to let the user know the actual operating time of the system including the number of on/off sequence. Whenever the balance level control between channel is needed, the volume control knob also serves to this special function when the preamplifier is in operation mode. L/R Balance control function is capable of  $-0.5\text{dB}$  per step up to  $-8.0\text{dB}$  at each channel.



To make the shortest signal path, SILK Invincible Preamplifier utilizes highest quality silver contact logic relay located closely with special nickel plating RCA connector. We select Nickel plating RCA since it offers numerous advantage over gold plating (especially gold plating connector of today's poor standard) since nickel has high surface durability and resistant to oxidization in long term, thus maximize signal connectivity and

minimize signal impurity. These form an input board as shown above and this board is located right at the rear of the chassis, making the shortest signal path goal become reality. Moreover the input board is also shielded away from the rest of the circuit to prevent any interference.

<b>SILK Invincible Preamplifier Specification</b>	
Frequency Response	20Hz – 20,000Hz +0dB, - 0.05dB 20Hz – 100,000Hz +0dB, -0.5dB 1Hz – 1,000,000Hz +0dB, -3.0dB*
Total Harmonic Distortion + Noise (THD+N) at Maximum Output Voltage	0.01% from 20Hz – 20,000Hz 0.08% from 20Hz – 100,000Hz
Input Impedance	100K Unbalanced, 200K Balanced
Output Impedance	Less than 1 ohm for Balanced and Unbalanced
Input Sensitivity for Maximum Output voltage	0.073Vrms Unbalanced, 0.147Vrms Balanced
Maximum Output Voltage	2.8Vrms Unbalanced, 5.6Vrms Balanced
Maximum Gain	+31.5dB Balanced and Unbalanced
Gain Setting Level	Mute at -95.5dB with total 43 steps from -60dB to +31.5dB
Maximum Gain Error Between Channels	Less than 0.05dB
Signal to Noise + Distortion Ratio (SINAD)	90dB**
Input Channel	<b>Basic Version</b> with 4 Unbalanced Inputs, 1 Unbalanced Output <b>Premium Version</b> with 1 Balanced Input + 3 Unbalanced Inputs, 1 Balanced Output, 1 Unbalanced Output
Dimensions	44cm x 40cm x 16cm (W x D x H) weight 13kg

All tests are performed with Hewlett Packard HP8903A without Filter on

\* Test with Oscilloscope and Function Generator

\*\* Test with Hewlett Packard HP8903A with 400Hz and 30KHz Filter on