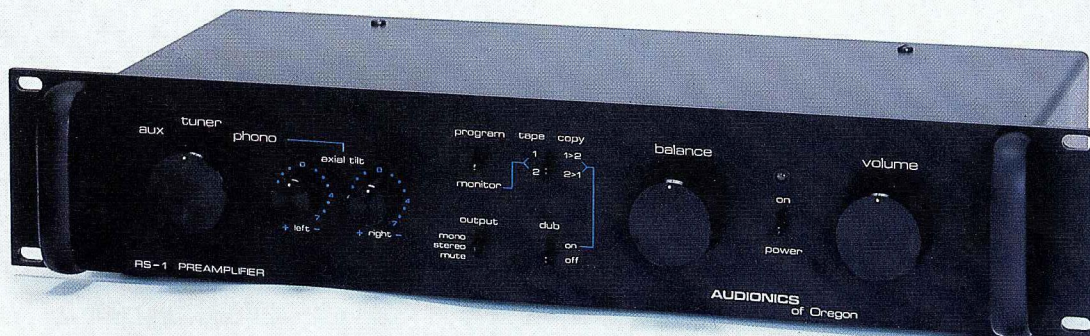


# RS1

## Class A, DC-Coupled High-Definition Preamplifier



The AUDIONICS of Oregon Reference Standard Preamplifier is a most logical refinement in advanced preamplifier design. We realize that most so-called "reference standard" products are capriciously appointed and, consequently, chose the design with care and with the confidence that we can support it.

The RS1 contributes significantly to innovative audio. But more importantly it recreates musical realism with such accuracy that it gives new dimension to an appreciation of the recorded performance. It manifests, through the Audionics System of listener centered technology, the sublime listening pleasure audiophiles have long sought.

To achieve this level of performance, we embodied in the RS1 leading-edge technology rarely envisaged in cost effective components. It employs a full comprehension of the impact electronic design has on our sensory perceptions, and it reflects meticulous attention to detail.

New in concept, intelligent in design, and crystalline in performance, the RS1 has few peers. And among moderately priced components, it clearly stands alone - an incredible value.

Offering state-of-the-art topology, the RIAA stage of the AUDIONICS of Oregon Reference Standard Preamplifier is based on integrated circuits in the vanguard of a new generation. Earlier generations of "operational amplifiers" were designed primarily for DC parameters; audio designs using them were characterized by severe limitations or complex adaptive circuitry. The intrinsically linear IC's in the RS1 are designed specifically for high-definition audio environments and are internally configured for true Class A operation. Class A design is employed throughout the RS1.

Low level circuitry is susceptible to RFI (radio frequency interference), which causes subtle slewing colorations at the least and - vivid CB reception at the worst. The "balanced line" mirror-image format of its circuitry, fully RF protected input and output connections, and internal switching of the RS1 afford "absolute" RF protection.

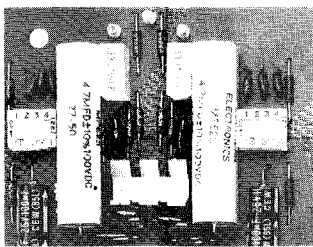
To realize its full potential, the RIAA stage requires the MIL SPEC component parts one finds in the RS1: close tolerance (1%) metal film resistors reduce the internal current noise of common carbon types by a factor of 10; 1% silver mica capacitors reduce noise and microphonics. (The RS1 is 4-6dB quieter than most advanced designs.) Comparable parts are used throughout the RS1. All connectors, including switch contacts, are gold flashed or Cromalyn-treated to eliminate rectification and other hazards. Its precision "pots" offer less than 1% tracking error.

**AUDIONICS** of Oregon

# The Audionics of Oregon RS1 Class A, DC-Coupled State-of-the-Art Preamplifier

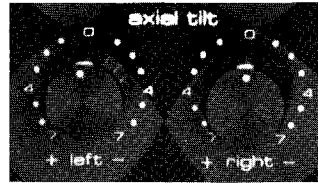
The RIAA network is computer designed, as is its conjunctive infrasonic filter. Both perform with exceptional accuracy. Deviations from the RIAA Standard response curve are not more than a remarkable  $\pm 0.2$  dB over the entire 20Hz-20kHz range. Insertion of the filter sharply rolls off the sub-sonic response of the RS1 below 20Hz, but without creating the "ripple effect" deviations found in the 30-100Hz region of most filter designs.

The merits of proper impedance matching between a phono cartridge and its pre-amplifier are well documented: minimized reflections, optimized signal transfer, and, improved accuracy. The requirements of cartridges vary widely, yet only a few designs offer "cartridge loading" options. Of these, most offer only resistive options. The RS1 provides *both* resistive *and* capacitive options, over broad ranges. Selection is via convenient PC-mount DIP switches which assure circuit integrity.



Design elegance and circuit integrity keynote the development of the RS1 throughout. Elegance implies simplicity, and the RS1 is notably without electronic novelties which serve their own purpose or attempt to correct fundamental deficiencies. Yet the RS1 does have one circuit of special significance, to assure that each user can enjoy the full potential of its superb RIAA section. That circuit is designated "Axial Tilt."

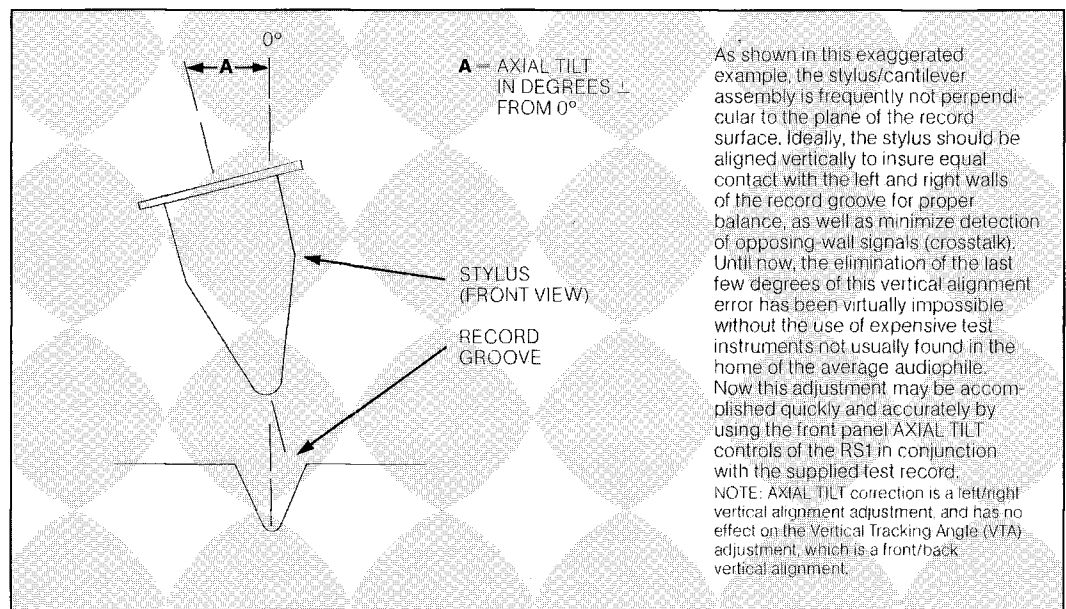
It is readily apparent that a stylus/cartridge, from its design to ultimate mounting, has immense impact on disc playback accuracy. Yet, critical as it may be, it is virtually impossible to precisely align a stylus without instruments. Vertical misalignment causes diminished channel separation and, worse, skews the image in a way *not correctable* with balance control.



We perceived the need for precise vertical alignment and developed our (patent applied for) Axial Tilt circuit. Despite its significance, it's easy to use: mount a cartridge in the normal fashion, then, as an added step, null inter-channel cross-talk with a test record, which is supplied, and the RS1's front panel Axial Tilt controls. Axial Tilt *electronically* compensates for *mechanical* misalignment errors of up to  $\pm 7^\circ$  from the vertical plane. This compensation of stylus "tilt" realizes the full capability of the stylus and properly positions the stereo image. This image creates the "realism" in music; Axial Tilt is an integral requirement for high-definition performance.

An AC coupled preamplifier output has a capacitor which prevents passage of potentially dangerous DC current. Unfortunately, it also causes time dispersive phase errors in the audio signal. Removal of the capacitor creates DC coupling. Typical "DC-to-light" designs amplify both *infrasonic* record warp and *supersonic* transients (above 100kHz!). The DC coupled output of the RS1 achieves significant performance advantages in a more carefully considered manner.

It eliminates commonly used electrolytic and tantalum capacitors, which exhibit voltage dependent capacitance shifts and non-linear equivalent series resistance. An automatic relay mutes the output for three seconds to allow circuit stabilization after mains turn-on.





## RS1 REFERENCE STANDARD PREAMPLIFIER

### MECHANICAL DESIGN

The RS1 features separate audio and power supply circuit boards. The full surround steel chassis eliminates RF and hum interference. A rack mount black anodized aluminum front panel with handles is standard.

### FUNCTIONS

#### Axial Tilt

Compensates for mechanical vertical misalignment of the phono cartridge/stylus. Corrects for "tilt" of up to  $\pm 7^\circ$ . Front-panel controls.

#### Tape Monitoring

Two Tape Inputs and Outputs are provided, with full capability for recording from Source; 1-2 and 2-1 dubbing; and separate Source monitoring during dubbing.

#### Output Select

Front panel three position switch selects Stereo, Mono, or Muted output.

#### AC Power

A separate AC switch is provided. Muted output is normal "Off."  
Two color LED glows red with Mono, green with Stereo.

### FEATURES

#### Input Selector

The RS1 accepts three selectable Input sources:

1. Low level Phono (RIAA)
2. High level Tuner
3. High level Auxiliary

#### Balance Control

A left right channel balance control is provided. Precise electrical/mechanical centering.

#### Stereo Volume Control

Tracking accuracy is typically within 1%.

#### Outputs

The RS1 provides several outputs:

1. Main simultaneous (500 Ohms and higher)
    - A. "0" level and higher
    - B. -10dB level
  2. 2-Tape (2.2KOhms and higher)  
Switched for two machines
- AC Outlet (unswitched)  
400 Watts

### SPECIFICATIONS

#### Description: RS1

The RS1 Reference Standard Preamplifier is an advanced Class A design using state-of-the-art topology, computer-designed RIAA network and buffer filtering, modified DC coupled output technology, and advanced power supply. Military grade components are used in quantity to provide exceptional reliability.

#### Phono Input:

Sensitivity: 2mV min.  
Overload: 165mV min.  
Noise: -82dB ("A" weighted)  
(Standard "A" weighting)  
RIAA EQ Accuracy:  $\pm 0.2$ dB  
typically, 20Hz-20kHz

#### Infrasonic Filter:

20Hz hinge point, third-order filter, 18 dB/Octave slope. De-featable via PC-mount switch.

Cartridge impedance matching ranges, selectable via PC-mount DIP switches:

Resistance (Ohms): 100K or 47K  
Capacitance (picofarads): 47pf, 150pf, 250pf in any additive combination.

#### High-level Inputs:

Sensitivity: 100mV min.  
Input Impedance: 25KOhms

#### Tape Outputs:

Output: 0.2V to 0.45V typical  
Output Impedance: 2.2KOhm  
THD & IMD: Typically 0.01% or less

#### Main Output:

Source Impedance: 500 Ohms

#### Dimensions and Weight:

Rack mount 19"W x 3 1/2"H x 7 1/2"D, 10 lbs. net (48.25 x 8.9 x 19 cm) and (4.5 kg).

#### Warranty:

The Audionics Limited Warranty applies (three years)

Audionics policy is to continuously improve our products. We reserve the right to change specifications or details without notice or liability.

Audionics is dedicated to high-definition audio. Our goal is to provide you with superior audio components at reasonable prices . . . and to do so responsibly. Our products share the virtues of accuracy and reliability.

This common-sense approach to audio excellence has earned Audionics a reputation you can trust. But the ultimate test is a demonstration. Hear the difference in accurate high-definition audio. Discover the value so many audiophiles have found. Experience Audionics.

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