



SILVER REFERENCE LINE

PREAMP

MANUAL



THANK YOU

for purchasing a product from TRINITY Electronic Design.

The TRINITY PREAMP sets new standards so that discerning music aficionados can finally enjoy their most beautiful recordings as if it were the true to life original.

The PREAMP supports

3 balanced inputs,

3 balanced outputs,

Polarity switch and a

discrete fully balanced volume control with 64 1dB steps.

The gain is 6dB.

Enjoy pure sound reproduction with our product.

Sincerely Yours

TRINITY Team



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SAFETY INSTRUCTIONS

1. Please read this operating manual carefully and observe all the instructions affixed to the appliance or written in this manual.
2. Install this product on a stable surface and make sure that nobody can trip over the cables.
3. This product should only be connected to a power source indicated on the product. If you are unsure what power source you have in your region, please contact your local power utility.
4. Never operate this product near water or with wet hands. If the product comes in contact with liquids, immediately disconnect it from the power source.
5. To exclude the risk of an electric shock, please never expose the product to the rain or other source of liquid.
6. In thunderstorms, do not install the product or put it into operation.
7. Never attempt to open the appliance or repair it yourself. If you open or remove the enclosure, you may expose parts that are subjected to dangerous levels of voltage. Any unauthorized opening of the appliance will cause the warranty claim to become null and void.
8. Do not allow children to play with electrical appliances without adult supervision. Children do not always recognize the possible risks and consequences.

SCOPE OF SUPPLY

The scope of supply comprises:

- TRINITY PREAMP (440mm x 96mm x 300mm plus 15mm stainless steel feet, weight 32kg)
- TRINITY Remote Control (with USB charging cable)
- TRINITY XLR cable (optional)
- 1 x Flight Case, weight: 35kg, dimension: 65cm, 55cm, 30cm

TRANSPORTATION AND CLEANING

Please only transport the parts listed in the scope of supply in the supplied flight case and use the supplied cotton gloves when unpacking and installing the appliances to avoid scratching the enclosures.

Clean the surfaces using the supplied microfiber cloth: immerse the cloth in lukewarm water containing no detergents and then carefully wipe the surface when the cloth is almost dry.

Never use chemical or aggressive detergents.

SELECTING THE POWER VOLTAGE

The implemented wide-range switched mode power supply modules allow an operation from 100Vac to 240Vac. The two fuses on the primary side are placed inside of the power entry module and filter.

CONNECTING AND STARTING

To install the PREAMP, select a stable, level surface directly next to the turn table so that the connecting cable to the tone arm is as short as possible. Avoid placing the appliance in direct sunlight and never place the modules directly next to radiators or fan heaters.

Protect all supplied parts from humidity and moisture.

Only wire up the components when the device is switched off.



WIRING UP

1. Disconnect the PREAMP from the power source. Never disconnect any wires unless the device is switched off.
2. Connect the PREAMP to the sources like DAC, PHONO and so on.
3. Connect the PREAMP to the POWER AMP.
4. Charge the Li-Pol battery of the remote control with the enclosed USB-DC cable, if necessary.

THE LOW NOISE INPUT STAGE

The TRINITY PREAMP is based on the same architecture of the TRINITY PHONO. It uses the same extraordinary gain stage, which is based on 12 ultra-linear fully differential gain stages.

The PREAMP is fully balanced from the input to the output.

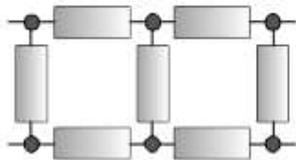
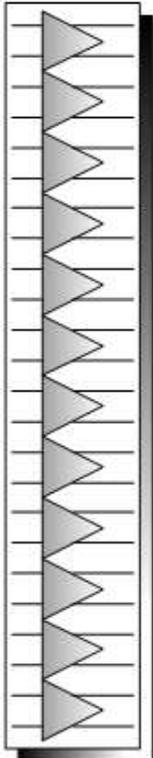
The TRINITY PREAMP uses 12 gain stages in parallel to reduce the input noise voltage by a factor of

$$\sqrt{12} = 3.5 \equiv 10.8dB$$

The Gain can be set during the assembling. The regular gain is 6dB, other gain can be realized on request.

Another advantage of using 12 gain stages is that the load of the volume control is split to 12 gain stages. That means each gain stage has only to deliver 1/12 of the necessary current and therefore stays in a Class A mode for all possible signal levels.

PREAMP



Fully Balanced Volume Control



- 12 Symmetrical Amplifier per Channel
- 64dB Volume Control with 1dB resolution
- Distortion Free
- Extremely Low Noise
- Fully Double-Balanced DC-coupled Architecture

THE VOLUME CONTROL

The main emphasis is then placed on the volume control, and its key parameter is to maintain sound quality.

Of course, for our premier product, there was no question of using a cheap integrated volume control.

Although customary potentiometers, e.g. equipment by Alps, Noble, or Penny & Giles, have a slightly better sound than an integrated attenuator, only switched resistance splitters produce a genuinely excellent result.

The quality of the volume control, of course, depends on the quality of the resistors and relays. As a result, the TRINITY PREAMP uses special, application-specific, precision thin-film resistors, which have a tolerance of < 0.1%. In addition, they have very low inherent noise and a very low temperature coefficient.

Contrary to conventional volume controls based on rotary switches or potentiometers which have impedances ranging from 100kOhms to 500kOhms, the TRINITY PREAMP volume control has an impedance of only 600 ohms.

Such a low figure is only achievable by the architecture of the volume control that comprises a number of cascaded, balanced π -sections. A π -section of this type needs a source and a load termination. For this reason, this type of circuit configuration is used primarily for high-frequency circuits. Since all impedances are matched, the driving source sees always the same load of 600Ohm independently which volume is selected. It is essential that the POWER AMP also sees always the same source resistance of 600Ohm. Therefore the sound does not change with the volume setting.

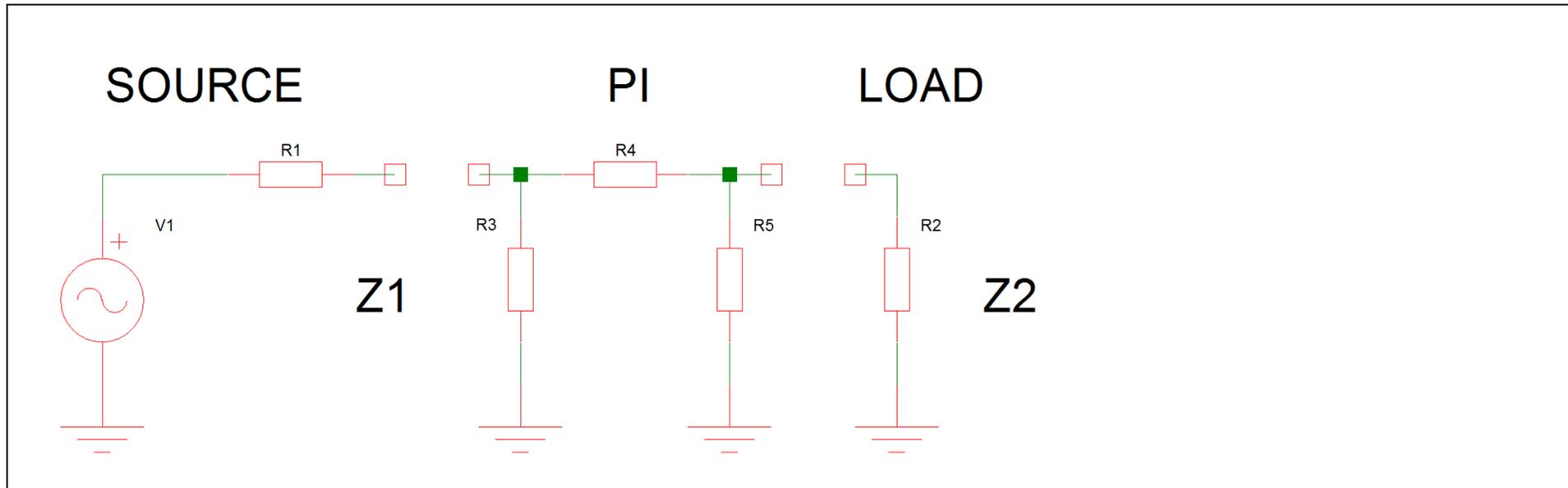


Fig. 2 A π -section is a network that generates a known loss when it is located between two matched impedances $Z1$ and $Z2$. $Z1$ represents the source impedance and $Z2$ the load impedance. The loss is regarded as the ratio of powers and is independent on direction. In the TRINITY PREAMP, $Z1=Z2=600$ Ohms.

Summarize – Volume Control:

The π - ladder attenuator implemented in the TRINITY-PREAMP has a special design which has several basic advantages:

1. The input and output impedances are always constant, independent of the volume setting.
2. Identical, very precise steps are very simple to reproduce.
3. The bandwidth is in the Megahertz range.
4. The low-resistance configuration guarantees extremely low resistance noise.
5. The used hermetic sealed relays produce no mechanical switching noise and have a long life time of 250.000.000 operations.

The 600-Ohmversion of the volume control also places special demands on the driver amplifier:

1. An additional gain of 6 dB is required.
2. The amplifier output stage must supply sufficient current since impedance is very small compared to traditional designs.



THE MEASUREMENT RESULTS

All TRINITY devices are shipped with a complete measurement protocol and not with some “typical” value published on the web page or in the data sheet.

What you see (in the measurement results) is what you get.

WARRANTY

The warranty period of the Trinity PREAMP is 2 years.

- Within the warranty period, any material and production defects will be rectified according to the following conditions:
- The warranty period begins with the purchase of the product and only applies to first buyers.
- A warranty claim is only valid if defects originating from material or manufacturing defects occur, but not as the result of natural wear and tear. In case of justified claims that occur during the warranty time, we will either repair the affected component free of charge or replace it at our discretion. In so doing, we are entitled to also supply a successor model in the interests of technical progress. Any further claims, in particular compensation damage of any nature, are excluded.
- The warranty period is not extended by any work performed during the warranty period, neither for replaced nor repaired components.
- Any improper handling or interventions by persons not authorized by TRINITY Electronic Design GmbH will render the warranty claim null and void. This also applies to damage arising from improper connection or use.
- The warranty excludes transportation damage that must be claimed immediately from the forwarding agency (railway, post, carrier). Any scratches on the enclosure or other visible defects must be reported to the dealer within 3 days.
- The provisions of the German product liability law and comparable foreign regulations remain unaffected, provided they are inalienable. We retain the right to make technical changes in the interests of technical progress



SUPPORT

If you have any questions relating to installation, operation or options, we will be pleased to answer them.

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