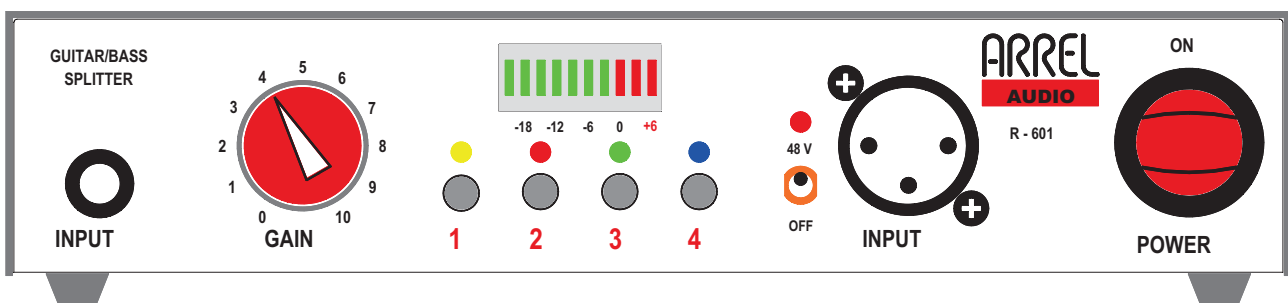




R-601 Guitar/Bass Splitter



User Manual

Issue 0.1

SAFETY INSTRUCTIONS



WARNING

Always follow the precautions listed below to avoid any possibility of serious injury or even death from electrical shock, short-circuiting, damages, fire or other hazards. These precautions include, but are not limited to, the following:

- Do not expose the instrument to liquids and rain. Do not use it near water or in damp or wet conditions, or place containers on it containing liquids. If any liquid seeps turn off the power and unplug the power cord from the AC outlet.
- Do not put burning items, such as candles, on the unit. A burning item may fall over and cause a fire.
- This instrument contains no user-serviceable parts. Do not open the instrument or attempt to disassemble or modify the internal circuit.
- Never insert or remove an electric plug with wet hands.
- Check the electric plug periodically and remove any dirt or dust which may have accumulated on it.
- Do not place the power cord near heat sources such as heaters or radiators, and do not excessively bend or otherwise damage the cord, place heavy objects on it, or place it in a position where anyone could walk on, trip over, or roll anything over it.



CAUTION

Always follow the precautions listed below to avoid any possibility of serious injury or even death from electrical shock, short-circuiting, damages, fire or other hazards. These precautions include, but are not limited to, the following:

- Do not connect the instrument to an electrical outlet using a multiple-connector. Doing so can result in lower sound quality, or possibly cause overheating in the outlet itself.
- When removing the electric plug from the instrument or an outlet, hold the plug itself and not the cord. Pulling by the cord can damage it.
- Remove the electric plug from the outlet when the instrument is not to be used for extended periods of time, or during electrical storms.
- Do not place the instrument in an unstable position where it might accidentally fall over.
- Before moving the instrument, remove all connected cables.
- When setting up the product, make sure that the AC outlet you are using is easily accessible. If some trouble or malfunction occurs, immediately turn off the power switch and disconnect the plug from the outlet. Even when the power switch is turned off, electricity is still flowing to the product at the minimum level.
- When you are not using the product for a long time, make sure to unplug the power cord from the wall AC outlet.
- Use only the stand/rack specified for the instrument. When attaching the stand or rack, use the provided screws only. Failure to do so could cause damage to the internal components or result in the instrument falling over.



Information for Users on Collection and Disposal of Old Equipment

This special symbol on the products, packaging, and/or accompanying documents means that used electrical and electronic products should not be mixed with general household waste.

For proper treatment, recovery and recycling of old products, please take them to applicable collection points, in accordance with your national legislation and the Directives 2002/96/EC.

By disposing of these products correctly, you will help to save valuable resources and prevent any potential negative effects on human health and the environment which could otherwise arise from inappropriate waste handling.

For more information about collection and recycling of old products, please contact your local municipality, your waste disposal service or the point of sale where you purchased the items.

[For business users in the European Union]

If you wish to discard electrical and electronic equipment, please contact your dealer or supplier for further information.

[Information on Disposal in other Countries outside the European Union]

This symbol is only valid in the European Union. If you wish to discard these items, please contact your local authorities or dealer and ask for the correct method of disposal.

ARREL Audio Contacts

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ARREL Audio is continuously working to the improvement of its systems and related documentation.
In any case, we reserve the right to change the specifications without notice but in the respect to the current legislation.

Disclaimer:

The information contained in this manual has been carefully checked and we believed is accurate at the time of publication.
In any case, we do not assume any responsibility for inaccuracies, errors or omissions nor any liability for any loss or damage resulting either directly or indirectly from use of the information contained in this manual.

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INTRODUCTION

The **ARREL Audio R-601** Guitar/Bass splitter has been designed for the most demanding professional recording studios where guitars are used in a multiple amplifier setting environment. This splitter can be used also with different musical instruments such as keyboards, synthesizers or microphones.

The **R-601** rugged and sturdy design is what you need for live use.

The **R-601** design, based on four separated transformers (dip switch for ground disconnection), is able to drive up to four amplifiers at the same time without noise and ground loops problems that often plagues most systems. Its high input sensibility allows coupling even with battery powered DI Boxes or with unbalanced low level outputs.

This distribution-amplifier is characterized by very high linearity and dynamic range, with distortion and noise at the lowest limit, resulting from the use of advanced technologies. Signal level is controlled by a potentiometer allowing a 35 dB range (-25dBu to 10dBu). Input and output impedance is calibrated in order to obtain the best coupling with guitar/bass amplifiers. 48V Phantom Power provides power to professional DI boxes if needed.

The target amplifier can be selected by using the front panel buttons or by a footswitch. More than one amplifier can be selected at the same time. In addition the **R-601** is provided with a wireless remote control allowing the musician to switch amplifiers (located in the recording room) comfortably from the control room. When the channel buttons are switched off, the remote control (footswitch or wireless remote control) is automatically activated.

ARREL Audio products are designed and manufactured in Italy.

Housing

The **R-601** is contained in a half rack metal box. No specific air conditioning is required for the racks, provided that there is a free flow of air through the rack from front to back and the temperature is maintained in the operating range. Consequently the racks may be stacked.

R-601 Front Panel Controls and Operations

POWER SWITCH

Turn on the R-601 by activating the illuminated power switch (red light on). To turn off the unit activate the switch in the opposite direction (red LED off) (Fig. 1).

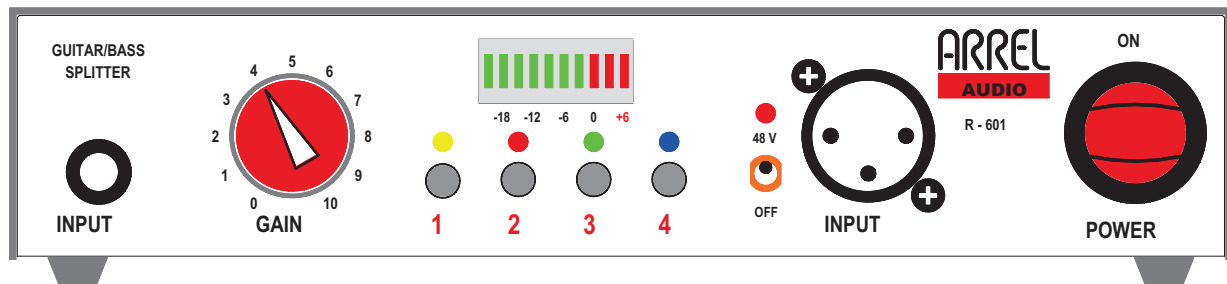


Fig. 1 R-601 Power on switch

INPUT SOURCE SELECTION

The R-601 input stage is capable to accommodate different connections and the input stages are both electronically balanced.

The input level is in the range -25, +10 dBu with a maximum input level of + 20 dBu.

The output level is -2dBu. This is the best output level to obtain the maximum performances from guitar/bass amplifiers.

The input connectors are: ¼" TRS jack and XLR connector with selectable phantom power.

When the 1/4" jack is not inserted the XLR input is activated, the insertion of the jack disconnects the XLR input (Fig. 1).

The possible connections are:

1. **Guitar and Bass direct connection to the TRS ¼" jack.** This connection can use a traditional Jack mono – Jack mono (unbalanced connection) cable or you can also use a jack mono – Jack stereo cable for a better (unbalanced- guitar, balanced-splitter) connection (Fig. 4).
2. **Guitar and Bass connected to the TRS ¼" jack by using a DI BOX (battery powered, low level unbalanced out).** This connection uses a Jack mono – Jack mono (unbalanced connection) cable but in order to obtain better results jack mono – Jack stereo cable should be used (Fig. 4).
3. **Guitar and Bass connected to the XLR (Phantom Power not activated).**
4. **Guitar and Bass connected to the TRS ¼" jack by using a professional DI BOX (high level balanced out).** In the case they need power supply they can be powered by using the XLR connector and the phantom power. If power supply is not requested they can be connected also on the ¼" TRS stereo Jack. **If the DI box requires power supply do not use the ¼" TRS stereo jack due to possible shorts circuits. For this connection use balanced cables only.**
5. The guitar splitter can be used to reamp a prerecorded guitar/bass dry track (connected to the TRS jack or the XLR connector). The input level is line level.

PHANTOM-POWER SWITCH

Select the +48 V position to activate the Phantom Power (LED on). To deselect the

Phantom Power switch again in the opposite direction (LED off) (Fig. 1).

GAIN CONTROL KNOB

Turn the gain knob (Fig. 1) in order to select the required amount of gain. The gain range is 35 dB (+10 dBu to -25 dBu).

LEVEL INDICATOR

The output level Indicator is based on a 10-LED Bargraph (7 x green LEDs and 3 x red LEDs) that measures in the range +6/-21 dBu, The resolution is 1.5 dB per step.

OUTPUT SELECTION BUTTONS

Press one of the four buttons to connect the guitar to one of the four amplifiers connected to the four outputs (LEDs) (Fig. 1).

Back panel

OUTPUT CONNECTORS

Four output transformers are used to provide galvanic isolation to the outputs. Four amplifiers can be connected to the four ¼" TRS jacks on the back panel. The dip switch is used to disconnect the ground in order to avoid ground loops (Fig. 2). The output cables must be Jack stereo – Jack mono (Fig. 3).

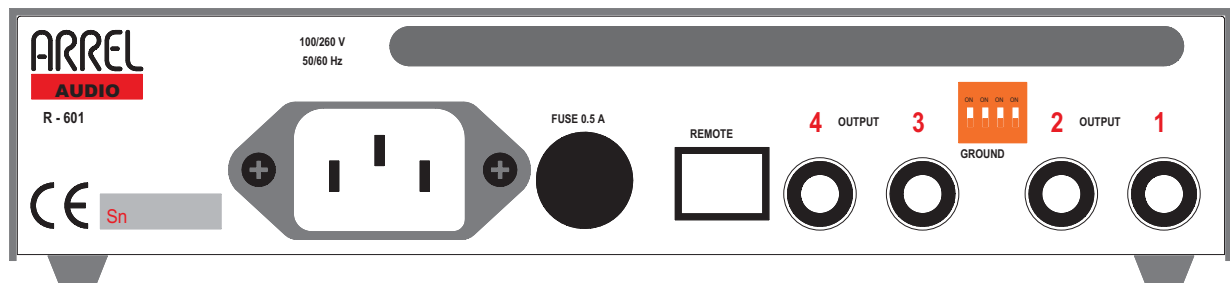


Fig. 2 R-601 Back Panel

REMOTE CONNECTOR

The footswitch is connected by a ten poles connector (1 common, 4 closed contacts) connector on the back panel (Fig. 2).

To increase the reliability all the electrical contacts and wires are duplicated.

Remote Control

A remote control is used to select the four amplifiers, the remote control range is about 25 meters (433 MHz).



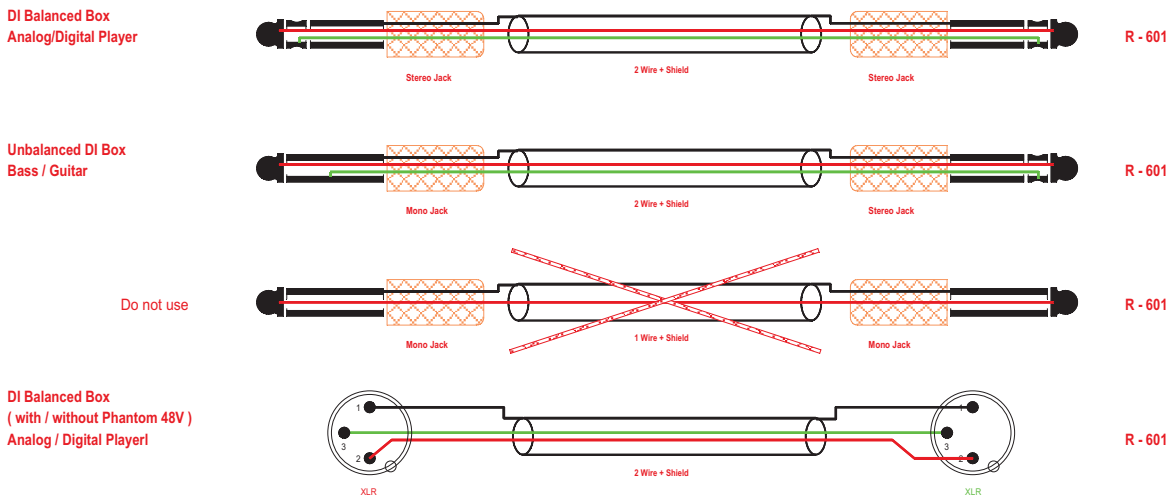
Fig. 3 Remote control

APPENDIX A: Connections

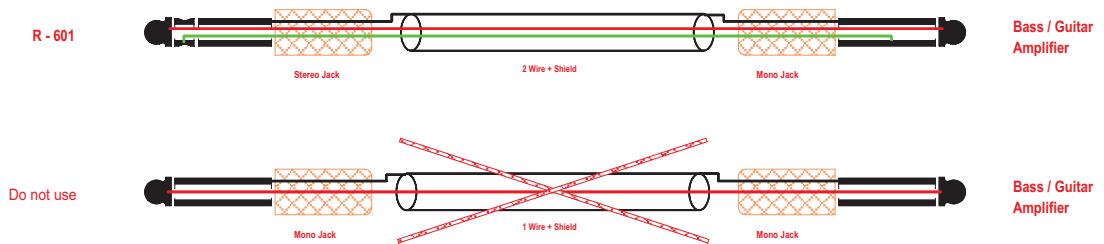


WIRING R - 601

INPUT



OUTPUT



REMOTE

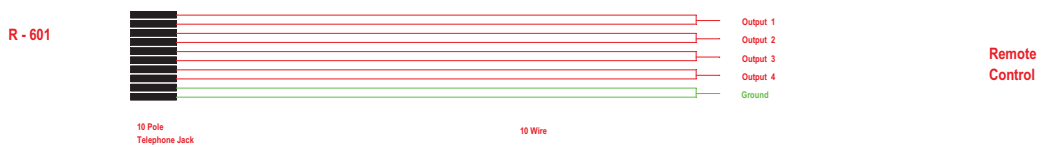


FIG. 4 R-601 Connections

APPENDIX B: Front Panel

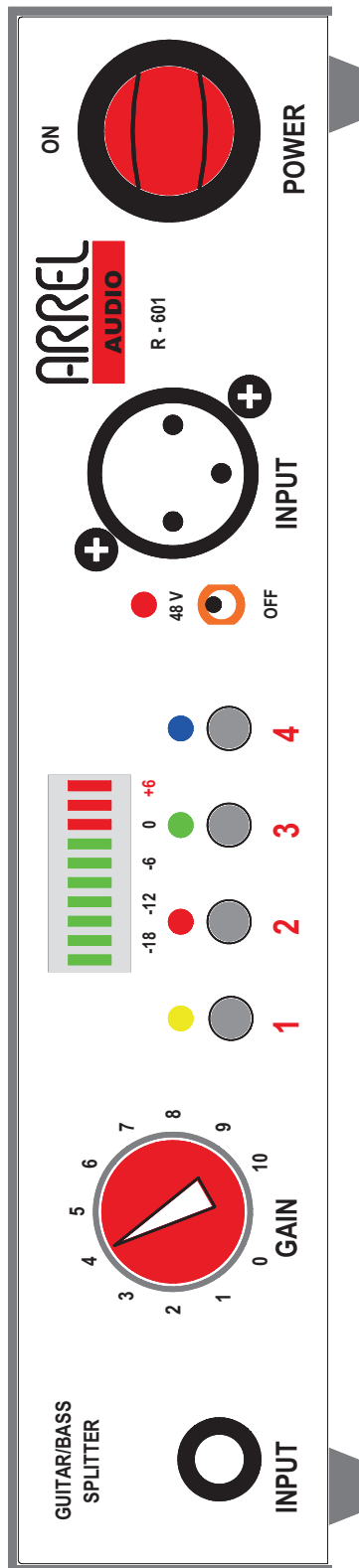


FIG. 5 R-601 Front Panel

APPENDIX C: Back Panel

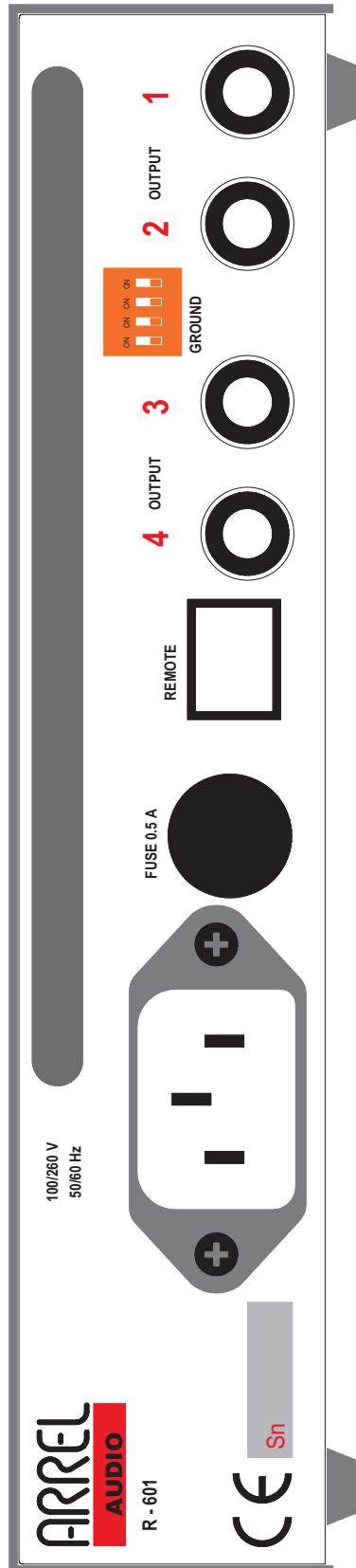


Fig. 6 R-601 Back Panel

TECHNICAL SPECIFICATIONS

Number of Channels:	1 Input, 4 Outputs
Power Supply	Universal switching regulator
Operating Voltage	100V ~ 240V, 50/60 Hz
Power Consumption	10 W
Line Input	Electronically Balanced, Impedance > 47 K Ω
Line Gain	Range -25 / +10 dBu, Max +20 dBu
Bandwidth	10 - 30.000 Hz +/-1 dB
Distortion + Noise	<0.003% (typical 0.001%)
Output Level	Electronically Balanced, Working Output Level -6 dBu. Max. Level +24 dBu, Output Load Impedance > 600 Ω
Front Panel Controls	Gain Pot., 48V Phantom Power switch, 4 Output Amplifier selection buttons, Illuminated power on/off switch
Front Panel Input Connectors	1/4" TRS jack, XLR connector
Front Panel Indicators	10-LED Bargraph Level Indicator (7 x green, 3 x red), 1.5dB step, 1 x red LED (48V Phantom), 4 x Output LEDs (yellow OUT 1, red OUT 2, green OUT 3, blue OUT 4)
Rear Panel Output Connectors	4 x TRS 1/4" jacks
AC mains	IEC C13 16 A connector, AC mains cord with IEC Schuko 16A
Construction	Half rack metal box
Dimensions	W 200 mm / 7.87", H 40 mm / 1.57", D 140 mm / 5.51"
Weight	1.5 kg