

since 1988



german sound

HIGH-PERFORMANCE CAR-AMPLIFIER

OWNER'S MANUAL

PR SERIES
BY AUDIO SYSTEM



R-110.4 **DSP**



Congratulation on your purchase of your new R-SERIES amplifier.

IMPORTANT: Before installation your power amplifier, we recommend to read the owner's manual carefully and to follow the instructions regarding connection and fitting exactly.

ATTENTION: Pay attention to advices and instructions of the car manufacturer.

IMPORTANT: Your proof of purchase is evidence of warranty claim for repair or replacement. Keep your proof of purchase, manual and original packaging.

ATTENTION: Use of sound components can impair your ability to hear necessary traffic sounds and may constitute a hazard while driving your automobile.

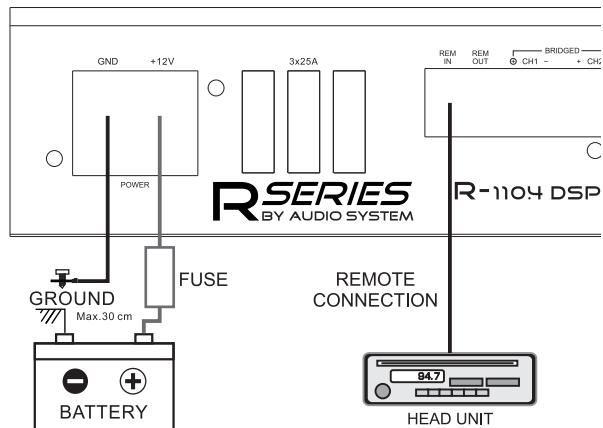
AUDIO SYSTEMGERMANY accepts no liability for hearing loss, bodily injury or property damage as a result of use or misuse of our products. We recommend installing the equipment by an authorized service center or dealer. A professional fitting and connection is the requirement for further warranty and perfect sound.

R-110.4 DSP

- 4-Channel High-Power Full-Range Class A/B amplifier
- Stable into 2 ohm stereo per channel and 4 ohm bridged mode
- 8-Channel High-Performance-DSP with Freescale Multicore Chip
- SigmaDSP with 294.912 Mhz and 6144 instructions per sample
- DSP Frequency Range 10 bis 24.000 Hz and Signal to Noise Ratio: 107 dB ADC and 112 dB DAC
- DSP BT App Control Software (IOS & Android)
- Infrared-Remote Control, Multi Function Regulator and OLED-Display can be connected directly to Operation Panel via the **DSP BOX**
- AUX-IN via 3,5mm jack plug
- Optional the Aluminium-Logo is interchangeable with the illuminated **LIT LOGO**
- Extremely wide Input Sensitivity from 0,3 to 8 V
- Multi-Way Protection Circuitry: overheating, overcurrent, short circuitry and speaker DC protection
- Operating Voltage : DC 10 ~ 16 V power input
- Molex High-Power-Input (normally original radio) with automatically „Turn-On“
- 1x Remote-Output for connecting additional amplifiers
- Adaptercable **HLAC** and **RCA HI**(optional)



R-110.4 DSP

**1. Battery disconnection:**

First, disconnect the power supply of the vehicle by removing the ground cable of the battery.

2. Ground connection:

Connect the GND (ground) connection of the amplifier with the car chassis. Keep this cable as short as possible (not longer than 50 cm) and use a suitable cross section (AWG size 8-6). Make sure, that the connection with the vehicle chassis is free of paint, dirt and dust.

3. +12 V Power connection:

Connect the +12 V contact of the amplifier with the supply cable via a fuse directly to the vehicle battery. Keep in mind, that the length of the cable from fuseholder to vehicle battery has to be maximum 30cm. For the amplifier to function at its best, use a high quality fuse holder and suitable cable preferably AWG 8-6 cable. This fuse protects the amplifier and the vehicle against the possibility of a short circuit in the power cable.

4. Remote connection:

Connect the REM-terminal of the amplifier to the remote-output (automatic 12 V antenna-output) of the head unit. Use a 0,5 - 1,5 mm power cable.

Attention:

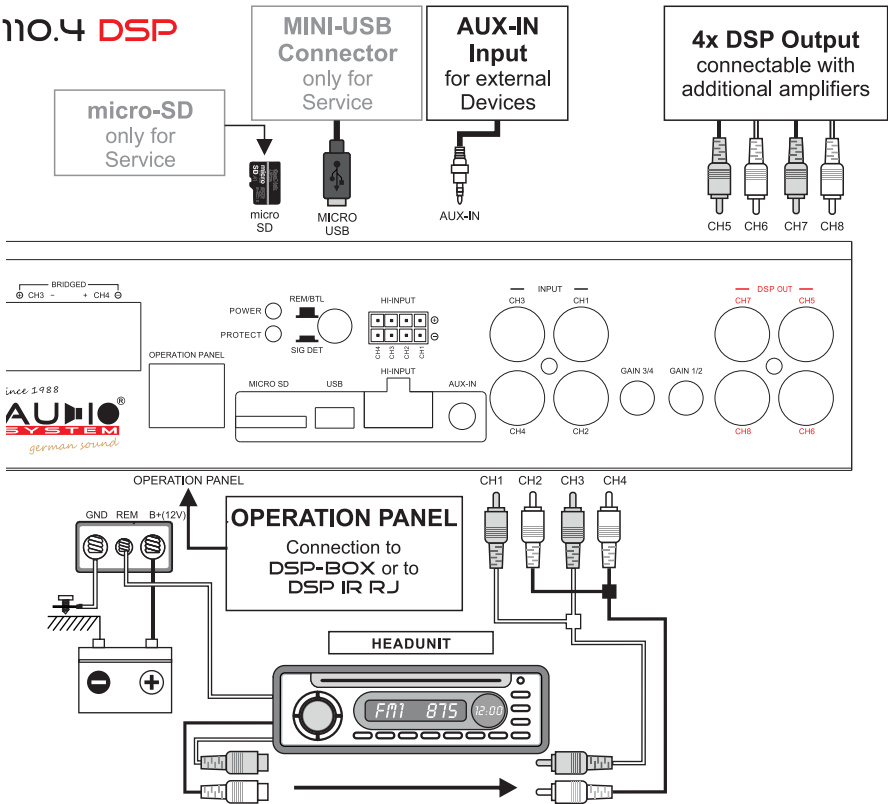
Further power amplifiers **must** be equipped with the REM-Out of the **R-110.4 DSP** are turned on.

⚠ ATTENTION ⚠

Please follow the instructions during the installation of your amplifier:

- a) Take care of a professional attachment. Pay attention, that no electrical cable, gas tank, hydraulic breakers or other components get damaged.
- b) There has to be enough cooling and air circulation. Avoid the installation in small closed boxes or close to heating parts.
- c) Protect the amplifier from fluids, wetness, heat and foreign material as well as from other influences.
- d) The amplifier is only to be built into vehicles with a 12 V DC power supply.
- e) Never install the power supply cable with other original wires of the vehicle (gas cables), fan motors, brand control moduls etc.
- f) Install the signal cable (cinch cable) as well as the speaker cable far away of the power cables to avoid troubles with the music signal.
- g) The cables of your amplifier have to be installed, so that there is no danger of binding, squeezing or breaking.

R-110.4 DSP



The **R-SERIES** amplifier has RCA inputs, which are connected by cinch cables to the preamplifier outputs of the controller. If this is not possible (usually with an original radio, OEM), the speaker outputs of the car radio can be connected directly to the High-Input CH 1-4 socket. **It is important** that the gain controls are first set to minimum and carefully crank up during commissioning. The power amplifier is automatically switched on when a signal is present. As an accessory, the adapter cable **HLAC** and **HLAC 10 OHM 20 W** can be purchased from specialist dealers. At the RCA-DSP outputs of the output stage, it is possible to control further amplifiers with the aid of a cinch cable. With the help of the internal DSP, variable high-, band- and low-passfilters, timedelay and phase shifts can be set. The DSP and Gain control settings allow you to tailor the power amp to your listening needs, vehicle needs and speakers. About AUX-IN, other music sources to the **R-110.4 DSP** can be connected. At the Operation Panel input, either an infrared eye **DSP IR RJ** for **DSP RC** remote control or the **DSP BOX** can be connected. The **DSP BOX** is a versatile connection tool that can be used with the **DSP IR**, **DSP CONTRL**, **DSP DISPLAY** and **DSP RC**.

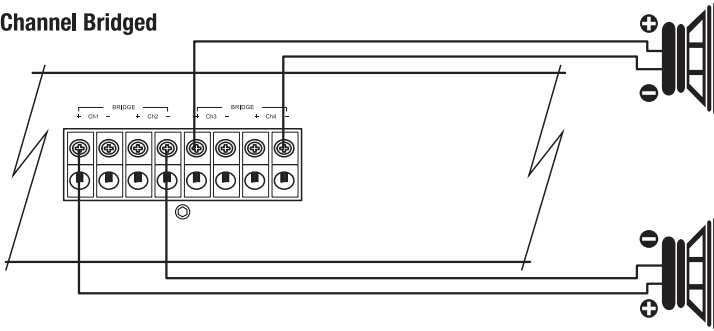
The link to iOS and Android DSP software to control all settings including the manual is available at **www.audio-system.de/dsp**.

In this regard, **AUDIO SYSTEM GERMANY** recommends to adjust your amplifier through a specialized service center, dealer or a specialist.



R-110.4 DSP

2-Channel Bridged

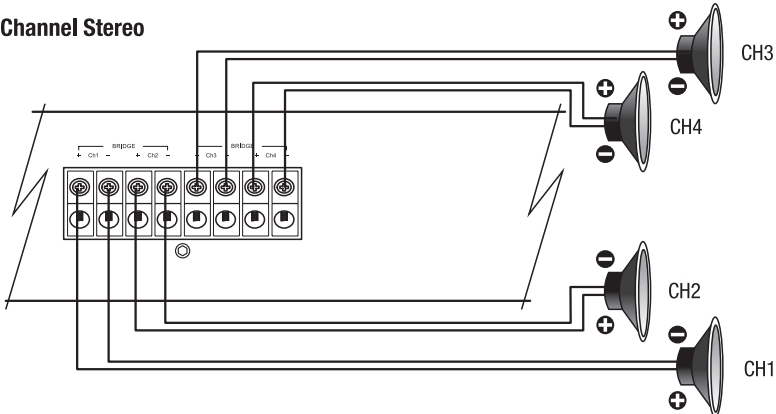


CH3/4-MONO
SUBWOOFER

Speaker-
Impedance
4 ~ 8 ohm

CH1/2-MONO
SUBWOOFER

4-Channel Stereo



CH3

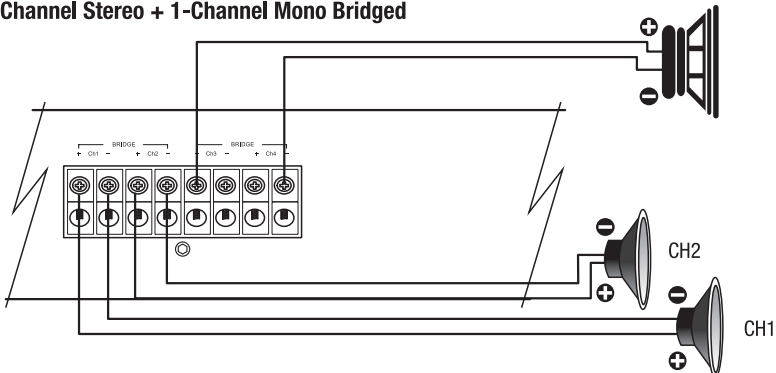
CH4

CH2

CH1

Speaker-
Impedance
2 ~ 8 ohm

2-Channel Stereo + 1-Channel Mono Bridged



CH3/4-MONO
SUBWOOFER
4 ~ 8 ohm

Speaker-
Impedance
2 ~ 8 ohm

CH2

CH1

This power amplifier is featured with an efficient protection system to prevent any damages like over-heating, overvoltage, short-circuit and DC at the loudspeaker output.
Occuring an error the protection-LED will light in red. In order to check the problem, first turn down all levels of the head unit, afterwards turn it off.

<p>AMPLIFIER IS NOT POWERED UP, NO LED IS LIGHTENING</p>	<ul style="list-style-type: none"> - ground connection professional connected? - +12V powercable professional connected? - remote cable professional connected? - fuses inserted and alright? - analyze voltage on the amplifier.
<p>PROTECTION LED ILLUMINATES GREEN WHILE AMPLIFIER IS SOUNDLESS</p>	<ul style="list-style-type: none"> - cinch cable alrith and professional connected - loudspeaker professional connected? - head unit alright?
<p>PROTECTION LED ILLUMINATES RED WHEN AMPLIFIER IS POWERED UP</p>	<ul style="list-style-type: none"> - amplifier too hot? - short-circuit at the loudspeaker output? - short-circuit caused by loudspeaker cable with vehicle chassi (ground)? - input voltage too high (e.g.faulty generator)?
<p>OVERHEATING (PROTECTION LED ILLUMINATES RED WHEN AMPLIFIER IS POWERED UP)</p>	<ul style="list-style-type: none"> - impedance alright? - loudspeaker error? - adequate airflow of the amplifier? <p style="text-align: center;">! CAUTION ! After cooling down, the amplifier turns on automatically.</p>
<p>ERROR IN AMPLIFIER FUSE</p>	<ul style="list-style-type: none"> - ground professional connected? - loudspeaker impedance alright? <p style="text-align: center;">! CAUTION ! Make sure when changing fuses to use the same value.</p>
<p>SOUND TOO LOW OR LOW-DISTORTED SOUND</p>	<ul style="list-style-type: none"> - input level control "GAIN" is set to match the head unit? - output level control of the head unit alright? - loudspeaker error? - loudspeaker cable checked? - crossover frequencies has been properly set? (Check head unit, amplilfier, DSP, soundprozessor, equalizer, frequency bandpassfilter...)
<p>HIGH HISS-ENGINE NOISE IN SPEAKERS</p>	<ul style="list-style-type: none"> - ground connection professional connected? - short-circuit caused by loudspeaker cable with vehicle chassi (ground)? - cinhcable (RCA) and/or loudspeaker cabel installed too close to the power connection cable? - cinch ground (RCA) of the head unit alright?

⚠ ATTENTION ⚠

Please contact your specialized dealer if the amplifier is still not working after it has been checked with the error list!

For warranty adjustement / repairs the original invoice has to be attached!
Opening the power amplifier is leading to a lost of warranty in either case!

R-110.4 DSP

Power Supply Voltage	10 - 16 V
Rated Power Output at 14,4 V	
-RMS power @ 4 ohm stereo	4x 110 W
-RMS power @ 2 ohm stereo	4x 200 W
-RMS power @ 4 ohm bridged	2x 400 W
Signal to Noise Ratio	> 97 dB
Signal to Noise Ratio DSP ADC (Typ)	107 dB
Signal to Noise Ratio (Typ) DSP DAC	112 dB
DSP Outputs	8 (4x intern und 4x extern)
High-Level Inputs	4
Low-Level Inputs	4
Aux-input	1
Sampling Rate	48 kHz
Operation temperature	-20° bis +80°C
Frequency Response	10 Hz ~ 24 KHz (+/- 1 dB)
THD@RMS Watts at 4 Ohm and 1/2 rated Power	< 0,033%
Channel Separation	75 dB
Fuse	3x 25 A
Input Sensitivity	300 mV ~ 8 V (+/- 5%)
Dimensions	325(L) x 50(H) x 185(W) mm



since 1988

AUDIO SYSTEM

german sound

AUDIO SYSTEM GERMANY
FALLTORSTRASSE 6 - 76707 HAMBRÜCKEN

DESIGNED AND ENGINEERED BY AUDIO SYSTEM GERMANY