

AIYIMA A20

AIYIMA A20 2.1 Channel Power Amplifier User Manual

Model: A20

Brand: AIYIMA

1. INTRODUCTION

The AIYIMA A20 is a 2.1 channel power amplifier designed for high-fidelity audio systems. It features a TPA3255 Class D amplifier chip, fully balanced circuitry with PFFB technology, and offers 300W x 2 output. Key functionalities include an adjustable High-Pass Filter (HPF), a dedicated subwoofer output, XLR and RCA input options, a 12V trigger for system integration, and a bypass function for use with external preamplifiers. This manual provides detailed instructions for the setup, operation, and maintenance of your A20 amplifier.

2. PRODUCT OVERVIEW

2.1 Front Panel



Image: Front view of the AIYIMA A20 amplifier, showing the power indicator, volume knob, and input selection switch.

- **Power Indicator Light (On/Off/HPF):** Indicates power status and HPF mode.
- **Volume Control Knob:** Adjusts the output volume.
- **Input Mode Switch (RCA/XLR):** Selects between RCA and XLR audio inputs.

2.2 Rear Panel

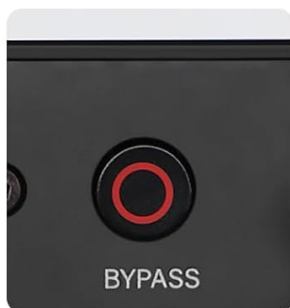


Image: Rear panel diagram of the AIYIMA A20, detailing all input and output connections and controls.

- **XLR Input (L/R):** Balanced audio inputs for connecting sources with XLR outputs.
- **RCA Input (L/R):** Unbalanced audio inputs for connecting sources with RCA outputs.
- **RCA Gain Switch (+3dB):** Provides a +3dB gain boost for RCA inputs, useful for matching lower-output sources.
- **HPF Knob:** Adjusts the High-Pass Filter frequency (60-200Hz) when HPF mode is active.
- **SUB OUT:** Output for connecting an active subwoofer.
- **BYPASS Button:** Engages or disengages bypass mode. Hold for 3 seconds to switch.
- **12V Trigger Input/Output:** For synchronized power control with compatible devices.
- **Speaker Output (L/R):** Binding posts for connecting passive speakers.
- **Power Input (DC 24-48V):** Connects to the provided power adapter.

2.3 Dimensions

Product Dimensions and Details




BYPASS Button




Mode Selector Switch




XLR / RCA Input




HPF Adjustment

Image: Diagram illustrating the physical dimensions of the AIYIMA A20 amplifier.

The AIYIMA A20 amplifier measures approximately 190mm (7.48 inches) in length, 142mm (5.59 inches) in width, and 46mm (1.81 inches) in height. Its net weight is approximately 1115g (2.2 pounds).

3. KEY FEATURES

- **High Performance Audio:** Achieves a 116dB Signal-to-Noise Ratio (SNR) and 0.002% THD+N for clear sound reproduction.
- **2.1 System Integration:** Features an adjustable High-Pass Filter (HPF: 60-200Hz) and a dedicated Subwoofer Output for optimized 2.1 channel audio setups.
- **Flexible Connectivity:** Includes XLR and RCA inputs with a toggle switch for source selection.
- **Bypass Mode:** Allows the amplifier to function as a pure power amplifier, bypassing its internal volume control, ideal for use with external preamplifiers.
- **RCA Gain Switch:** A +3dB gain switch for RCA inputs to match various source levels.
- **12V Trigger:** Enables synchronized power on/off with other compatible audio components.
- **Quality Components:** Built with a 4-layer gold-sunk PCB, German WIMA capacitors, and Japanese

Rubycon capacitors for reliability and sound integrity.

- **Swappable Op-Amps:** Features LME49720 op-amps in a swappable design, allowing for customization.
- **Efficient Cooling:** Internal air convection design ensures stable high-power operation.

4. SETUP GUIDE

4.1 Connections

Complete Device Integration Guide

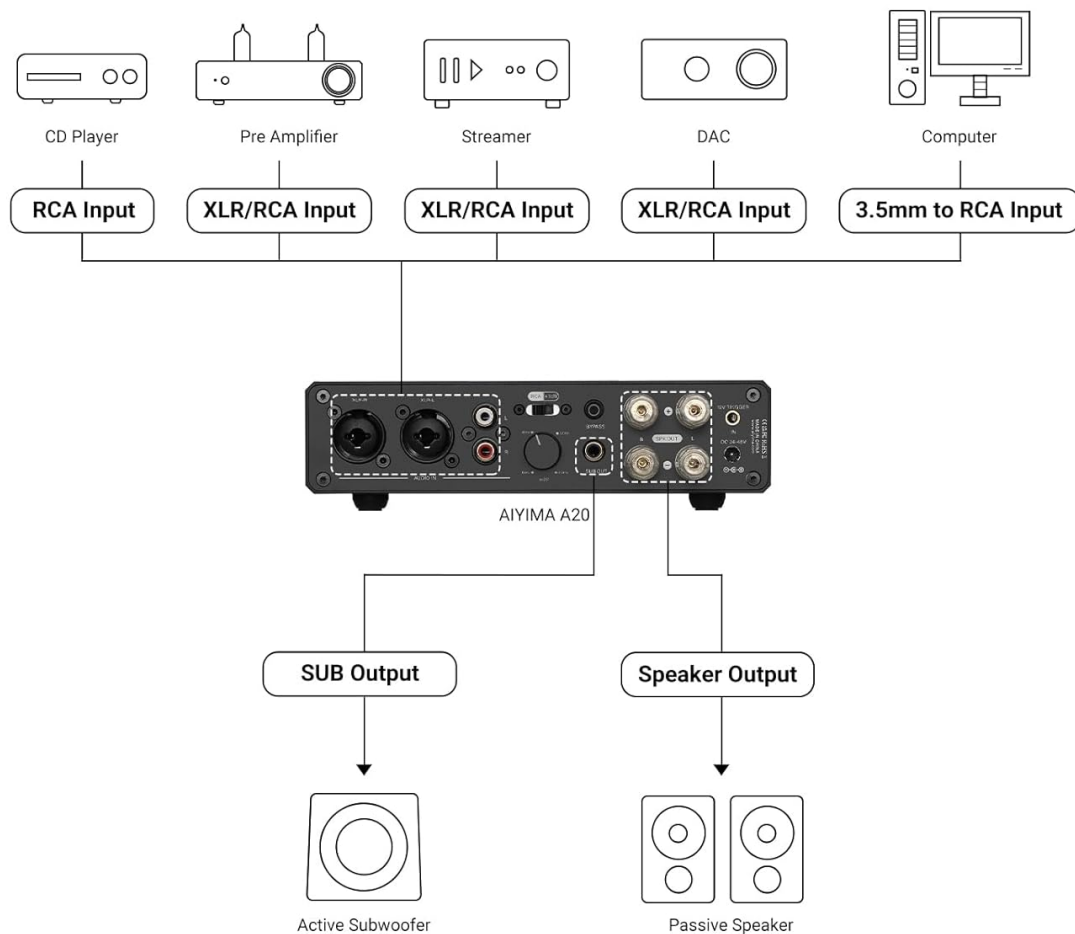


Image: Diagram illustrating various connection possibilities for the AIYIMA A20 amplifier with different audio sources and outputs.

1. **Speaker Connection:** Connect your passive speakers to the Speaker Output binding posts on the rear panel. Ensure correct polarity (Red/Positive to Red/Positive, Black/Negative to Black/Negative).
2. **Audio Source Connection:**
 - **XLR Input:** For balanced audio sources (e.g., high-end CD players, preamplifiers, DACs) using XLR

cables.

- **RCA Input:** For unbalanced audio sources (e.g., CD players, streamers, DACs, computers via 3.5mm to RCA adapter) using RCA cables.
3. **Subwoofer Connection:** If using an active subwoofer, connect its input to the SUB OUT port on the A20.
 4. **12V Trigger Connection:** If you have a compatible device (e.g., AIYIMA T20 preamp) with a 12V trigger output, connect it to the 12V Trigger Input on the A20 for synchronized power control.
 5. **Power Connection:** Connect the provided DC48V 5A power adapter to the Power Input (DC 24-48V) on the rear panel, then plug the adapter into a wall outlet.

5. OPERATING INSTRUCTIONS

1. **Power On/Off:** Once all connections are secure, turn on the amplifier using the power switch. The power indicator light will illuminate.
2. **Input Selection:** Use the Input Mode Switch on the front panel to select between RCA and XLR inputs based on your connected source.
3. **Volume Adjustment:** Rotate the Volume Control Knob on the front panel to adjust the audio output level. Start with a low volume and gradually increase it.
4. **High-Pass Filter (HPF) Adjustment:**



Image: Detail showing the HPF knob on the rear panel with frequency markings (60Hz, 80Hz, 120Hz, 200Hz).

If you are using a subwoofer and wish to protect your main speakers from low bass frequencies, activate the HPF mode. Then, use the HPF Knob on the rear panel to set the desired crossover frequency between 60Hz and 200Hz. This directs frequencies below the set point to the SUB OUT and filters them from the main speaker outputs.

5. **Bypass Mode:**

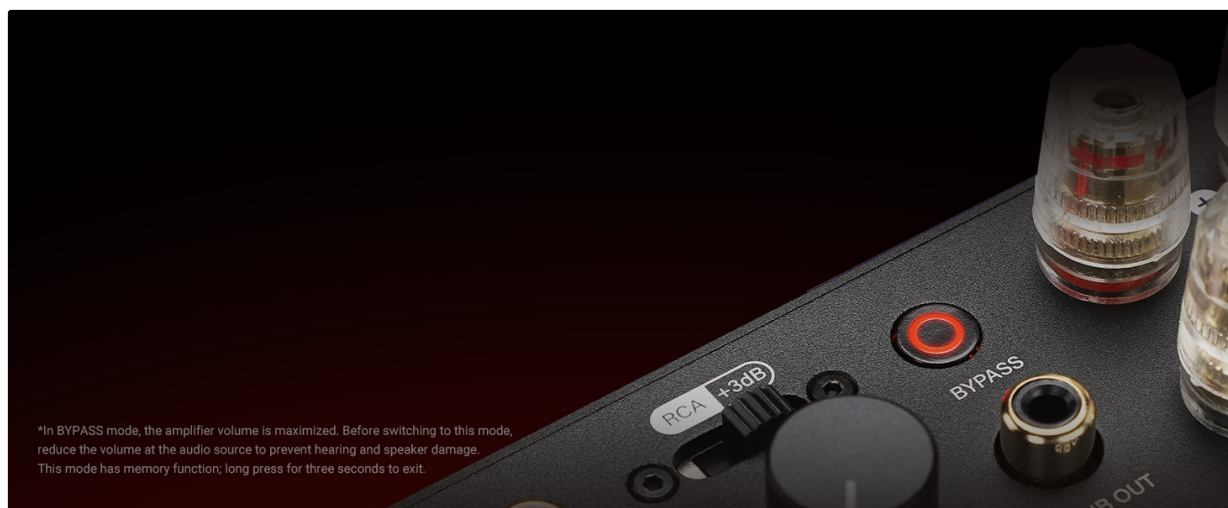


Image: Close-up of the Bypass button on the rear panel.

To use the A20 as a pure power amplifier with an external preamplifier, press and hold the BYPASS button on the rear panel for 3 seconds. In bypass mode, the amplifier's internal volume control is maximized. Before engaging this mode, ensure the volume at your audio source or external preamplifier is reduced to prevent speaker damage. To exit bypass mode, press and hold the BYPASS button for 3 seconds again.

6. **RCA Gain Switch:** If your RCA audio source has a low output level, you can engage the +3dB gain switch located near the RCA inputs on the rear panel to boost the signal.

6. MAINTENANCE

- **Cleaning:** Use a soft, dry cloth to clean the exterior of the amplifier. Avoid using liquid cleaners or solvents.
- **Ventilation:** Ensure the amplifier has adequate ventilation. Do not block the ventilation holes on the sides.
- **Environment:** Keep the amplifier away from direct sunlight, heat sources, excessive moisture, and dust.
- **Power Off:** Always power off the amplifier and disconnect it from the power outlet before performing any maintenance or making connections.
- **Op-Amp Swapping:** If you choose to swap op-amps, ensure the amplifier is powered off and disconnected. Refer to specialized guides for proper op-amp handling and replacement procedures.

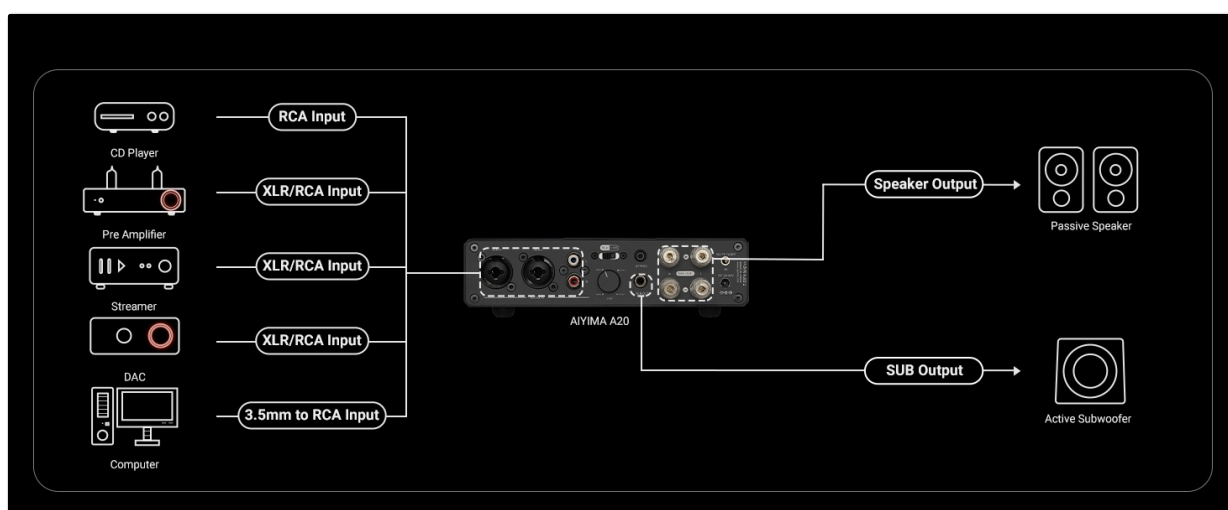


Image: Close-up view of the internal circuit board, highlighting the swappable op-amps.

7. TROUBLESHOOTING

- **No Sound Output:**

- Check if the amplifier is powered on and the indicator light is active.
- Verify that the correct input (RCA or XLR) is selected.
- Ensure all audio cables are securely connected to both the source and the amplifier.
- Check speaker connections for correct polarity and secure contact.
- Adjust the volume knob. If in Bypass mode, ensure the external preamplifier's volume is not muted or too low.

- **Distorted Sound:**

- Reduce the volume level from both the source and the amplifier.
- Check for damaged audio cables.
- Ensure speaker impedance matches the amplifier's capabilities.
- If using RCA input, try toggling the +3dB gain switch off if the source output is already high.

- **Humming or Buzzing Noise:**

- Ensure all connections are secure.
- Try connecting the amplifier and source to the same power outlet to avoid ground loops.
- Move the amplifier away from other electronic devices that may cause interference.

- **12V Trigger Not Functioning:**

- Verify that the connected device's 12V trigger output is active.
- Ensure the 12V trigger cable is correctly connected.

8. SPECIFICATIONS

Feature	Specification
Product Dimensions (L x W x H)	7.48 x 5.59 x 1.81 inches (190 x 142 x 46 mm)
Weight	2.2 Pounds (1115g)
Item Model Number	A20
Number of Channels	2.1
Voltage Input	DC 24-48 Volts
Signal-to-Noise Ratio (SNR)	116dB
Total Harmonic Distortion + Noise (THD+N)	0.002%

Feature	Specification
High-Pass Filter (HPF) Range	60-200Hz
Inputs	XLR (Balanced), RCA (Unbalanced)
Outputs	Speaker Output (L/R), SUB OUT (for active subwoofer)
Special Functions	12V Trigger, Bypass Mode, RCA +3dB Gain Switch, Swappable Op-Amps

8.1 Power Output (Approximate)

A20 Power Meter			
PSU	Speaker Impedance	Rated Output Power (1kHz, THD 1%)	Peak Output Power (1kHz, THD 10%)
36V/6A	4Ω	107W *2	130W *2
	6Ω	100W *2	120W *2
	8Ω	94W *2	110W *2
48V/5A	4Ω	120W *2	144W *2
	6Ω	110W *2	130W *2
	8Ω	100W *2	115W *2
48V/10A	4Ω	250W *2	288W *2
	6Ω	210W *2	230W *2
	8Ω	150W *2	185W *2

Image: Table detailing the rated and peak output power of the A20 amplifier under different power supply units (PSU) and speaker impedances.

PSU	Speaker Impedance	Rated Output Power (1kHz, THD 1%)	Peak Output Power (1kHz, THD 10%)
36V/6A	4Ω	107W *2	130W *2
	6Ω	100W *2	120W *2
	8Ω	94W *2	110W *2
48V/5A	4Ω	120W *2	144W *2
	6Ω	110W *2	130W *2
	8Ω	100W *2	115W *2
48V/10A	4Ω	250W *2	288W *2
	6Ω	210W *2	230W *2
	8Ω	150W *2	185W *2

9. WHAT'S IN THE BOX

Package Includes



AIYIMA A20 Balanced Stereo Power Amplifier *1



Power Adapter *1



User Manual *1



Warranty Card *1



12V Trigger Cable *1






Image: Visual representation of the items included in the AIYIMA A20 product package.

- 1 x AIYIMA A20 Balanced Stereo Power Amplifier
- 1 x DC48V 5A Power Adapter
- 1 x User Manual
- 1 x Warranty Card
- 1 x 12V Trigger Cable

10. WARRANTY AND SUPPORT

The AIYIMA A20 amplifier typically comes with a 2-year warranty from the date of purchase. Please refer to the included warranty card for specific terms and conditions. For technical support, troubleshooting assistance, or warranty claims, please contact AIYIMA customer service through the retailer where the product was purchased or visit the official AIYIMA website for contact information.

Related Documents - A20

	<p>AIYIMA A07 2.0-Channel Power Amplifier User Manual</p> <p>User manual for the AIYIMA A07 2.0-Channel Power Amplifier, detailing its features, specifications, connections, and operating instructions.</p>
	<p>AIYIMA A20 Balanced Stereo Power Amplifier User Manual</p> <p>User manual for the AIYIMA A20 Balanced Stereo Power Amplifier, detailing setup instructions, specifications, operation guide, precautions, FAQs, and warranty information. Includes performance test results and connectivity details.</p>
	<p>AIYIMA A07 PRO Bluetooth 5.2 Amplifier User Manual</p> <p>User manual for the AIYIMA A07 PRO amplifier, detailing its specifications, front and rear panel descriptions, and frequently asked questions. This HiFi Class D amplifier supports Bluetooth 5.2 and has a 2.0/2.1 channel output.</p>
	<p>AIYIMA D05 Bluetooth 5.0 Digital Amplifier User Manual AIYIMA AUDIO</p> <p>AIYIMA D05 Bluetooth 5.0 Digital Amplifier User Manual: Get detailed instructions on setup, operation, specifications, and troubleshooting for your AIYIMA D05 2.0/2.1 channel stereo HiFi amplifier. Covers front/rear panel layout, remote functions, PC-USB connectivity, sound settings, and FAQs.</p>
	<p>AIYIMA D03 Bluetooth 5.0 Amplifier User Manual - Specs & Troubleshooting</p> <p>Comprehensive user manual for the AIYIMA D03 Bluetooth 5.0 2.0/2.1-Channel Amplifier. Includes front/rear panel introductions, detailed specifications, and answers to common product questions and troubleshooting tips.</p>
	<p>AIYIMA A08 Bluetooth 5.0 2.0 Channel Power Amplifier User Manual</p> <p>User manual for the AIYIMA A08, a 2.0 channel Bluetooth 5.0 power amplifier featuring TPA3255 technology, Qualcomm QCC3034 chip, and high-fidelity sound. Includes setup, specifications, and troubleshooting.</p>

Documents - AIYIMA – A20

no relevant documents