audio resolution

HA-8 VCA

English

Modular, 8 stereo channel studio headphone amplifier
Owner's manual

WARNING

Always follow the basic precautions listed below to avoid the 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:

Power supply/Power cord

- Only use the voltage specified as correct for the device. The required voltage is printed on the name plate of the device.
- Use only the specified AC power adaptor.
- 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.

Do not open

- Do not open the device or attempt to disassemble the internal parts or modify them in any way. The device contains no user-serviceable parts. If it should appear to be malfunctioning, discontinue use immediately and have it inspected by qualified AudioResolution service personnel.

Water warning

- Do not expose the device to rain, use it near water or in damp or wet conditions, or place containers on it containing liquids which might spill into any openings.
- Never insert or remove an electric plug with wet hands.

If you notice any abnormality

- If the power cord or plug becomes frayed or damaged, or if there is a sudden loss of sound during use of the device, or if any unusual smells or smoke should appear to be caused by it, immediately turn off the power switch, disconnect the electric plug from the outlet, and have the device inspected by qualified AudioResolution service personnel.
- If this device or the AC power adaptor should be dropped or damaged, immediately turn off the power switch, disconnect the electric plug from the outlet, and have the device inspected by qualified AudioResolution service personnel.

CAUTION

Always follow the basic precautions listed below to avoid the possibility of physical injury to you or others, or damage to the device or other property. These precautions include, but are not limited to, the following:

Power supply/Power cord

- Remove the electric plug from the outlet when the device is not to be used for extended periods of time, or during electrical storms.
- When removing the electric plug from the device or an outlet, always hold the plug itself and not the cord. Pulling by the cord can damage it.
- To avoid generating unwanted noise, make sure there is 50cm or more between the AC power adaptor and the device.
- Do not cover or wrap the AC power adaptor with a cloth or blanket.

Location

- Before moving the device, remove all connected cables.
- When setting up the device, 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.
- Avoid setting all controls to their maximum. Depending on the condition of the connected devices, doing so may cause feedback and may damage the speakers.

- Do not expose the device to excessive dust or vibrations, or extreme cold or heat (such as in direct sunlight, near a heater, or in a car during the day) to prevent the possibility of panel disfiguration or damage to the internal components.
- Do not place the device in an unstable position where it might accidentally fall over.

Connections

- Before connecting the device to other devices, turn off the power for all devices. Before turning the power on or off for all devices, set all volume levels to minimum.

Handling caution

- When turning on the AC power in your audio system, always turn on the power amplifier LAST, to avoid speaker damage. When turning the power off, the power amplifier should be turned off FIRST for the same reason.
- Do not insert your fingers or hands in any gaps or openings on the device.
- Avoid inserting or dropping foreign objects (paper, plastic, metal, etc.) into any gaps or openings on the device If this happens, turn off the power immediately and unplug the power cord from the AC outlet. Then have the device inspected by qualified AudioResolution service personnel.
- Do not use the device or headphones for a long period of time at a high or uncomfortable volume level, since this can cause permanent hearing loss. If you experience any hearing loss or ringing in the ears, consult a physician.
- Do not rest your weight on the device or place heavy objects on it, and avoid use excessive force on the buttons, switches or connectors.

XLR-type connectors are wired as follows (IEC60268 standard): pin 1: ground, pin 2: hot (+), and pin 3: cold (-).

AudioResolution cannot be held responsible for damage caused by improper use or modifications to the device, or data that is lost or destroyed.

Always turn the power off when the device is not in use.

The performance of components with moving contacts, such as switches, volume controls, and connectors, deteriorates over time. Consult qualified AudioResolution service personnel about replacing defective components.

Illustrations herein are for explanatory purposes only, and may not match actual appearance during operation.

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Specifications and descriptions in this owner's manual are for information purposes only. AudioResolution reserves the right to change or modify products or specifications at any time without prior notice. Since specifications, equipment or options may not be the same in every locale, please check with your AudioResolution dealer.

CAUTION

Use only the adaptor included with this AudioResolution. Use of a different adaptor may result in equipment damage, overheating, or fire.

Be sure to unplug the adaptor from the outlet when not using AudioResolution, or when there are lightning storms in the area.

To avoid generating unwanted noise, make sure there is 50 cm or more between the power adaptor and AudioResolution.

HA-8 VCA

Dear customer,

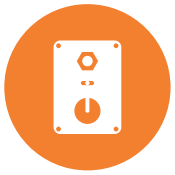
Thank you for purchasing **AudioResolution HA-8 VCA**. Professional analog, modular, High-Fidelity, 8-channel stereo, studio headphone amplifier with remote voltage volume control (VCA), which guarantees perfect balance between Left and Right channels. Signal path is fully analog with high dynamic headroom and low noise and distortion. Features three balanced stereo audio inputs, 8 stereo headphone outputs, 8 remote volume control units with input routing switch and headphone output. The unit is suitable for professional recording and broadcast studios.

Features:

- 3 stereo balanced inputs
- 8 independent headphone outputs
- Local/ remote headphone output
- VCA volume control
- Wide regulation range
- Input selection routing switch
- High power independent to headpone impedance
- High-Fidelity, High-Performance audio amplifier
- High output power
- Rack mountable – 2RU
- Can be downscaled to four stereo headphones channel
- Includes 8 remote headphone volume control units

VCA volume control

8 channels



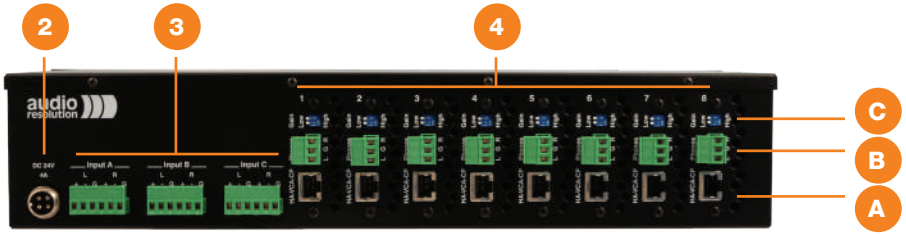
local/remote headpohone out

The package contains

1. AudioResolution unit
2. Power supply
3. Manual
4. Test report

HA-8 VCA - Front panel (Input section)

HA-8 VCA - Rear panel (Output section)



HA-VCA Remote-control panel

MAIN DEVICE

1) Power LED

Signalization, that the unit is connected to a power source and operating.

2) Power connector

Power supply connector, 24V DC /4A.

3) Analog inputs

Three stereo analog balanced inputs A,B,C. You can choose, which one you listen on the remote-control panel. Inputs are 6-pin Phoenix connectors.

4) Output channel connections

A – HA-VCA connector – RJ45 connector for connecting the remote-control panel.

B – Phones out – analog headphones output on 3-pin Phoenix connector

C – Gain switch – provides additional signal gain of 10dB if needed (for high impedance headphones)

REMOTE CONTROL PANEL (CP)

5) Headphones JACK

Stereo JACK 6,3mm connector for connecting the headphones. Connections: Tip – left channel, Ring – right channel, Sleeve - ground

6) Input selector

Input switch for selecting one of three stereo inputs to listen to.

7) Volume knob

Volume potentiometer for regulating headphones volume. Volume regulation is done via DC voltage (VCA) so there is no audio signal directly on the potentiometer for better audio quality and higher regulation range.

8) Input connector

RJ45 connector for interconnecting the remote-control panel HA-VCA-CP with central unit HA-8 VCA. Please use standard CAT5.E or CAT6 cable at least with AWG24. Maximum recommended length of cable is 25m. Longer cable may affect frequency response and maximum output power due to losses on cable.

Operation

HA-8 VCA is an 8-channel studio headphone amplifier designed for use with central unit placed in the rack and remote-control panels with headphones outputs placed on different places at studio. Interconnections between the central unit and remote-control panels made via standard CAT5.E or CAT6 cables. The cable provides volume control, input source switching and headphones output.

Unit is powered by 24V DC power supply, capable of delivering 4amps. There is no power switch on the unit, so when the power supply is connected, unit is turned on.

Central unit has three stereo balanced inputs and eight independent output channels. Each output channel can amplify one of three inputs. Selection is made via the remote-control panel. Output volume is also regulated via the remote-control panel. Volume control is made as VCA (voltage control amplifier), so there is no analog signal on the potentiometer. Only DC voltage is regulating gain of signal amplifier in the central unit. Benefit of this method is possibility of usage a longer interconnecting cable for remote-control panel without affecting the audio quality and also higher regulation range of potentiometer.
There is also headphones output directly on the unit if there is a need to run a separate cable with higher dimension to the headphones JACK connector.
For use of high impedance headphones there is a GAIN switch which in “HIGH” position adding additional signal gain of +10dB.

Protections

HA-8 VCA has built in several protections. There is protection against DC voltage on the output, overcurrent protections, short circuit protection and thermal protection. Maximum output current is around 250mA per channel.

Connecting the remote-control panel HA-VCA-CP to HA-8 VCA

We recommend to use at least CAT5.E cable with AWG24 or better cable with higher dimension of twisted pairs. Maximum length of cable should be 25m. Longer cable can affect the frequency response and maximum output power for headphones due to losses on cable.

If you really need more that 25m long cable please use CAT cable for connecting the remote-control panel and separate cable (etc. microphone cable) with higher dimension to wire the headphones connector on the HA-8 VCA unit to headphones JACK on the remote-control panel.

Usage

1. Mount the HA-8 VCA unit in the rack
2. Mount the HA-VCA-CP panels at desired locations
3. Wire the HA-VCA-CP panels to HA-8 VCA unit
4. Check if the Gain setting is set to “Low” on the HA-8 VCA unit
5. Connect Input signal sources to HA-8 VCA unit
6. Lower the volume to the minimum on all HA-VCA-CP panels
7. Connect the power supply to the HA-8 VCA unit
8. Connect your headphones to HA-VCA-CP headphones JACK connector
9. Slowly set the desired volume for your headphones on each HA-VCA-CP panel
10. If you are using a high-impedance headphones and the volume on the maximum position is not sufficient, please lower the volume on HA-VCA-CP and set the Gain switch on HA-8 VCA unit to “High” position for corresponding output channel and then set your volume on HA-VCA-CP

Recommendation

Always lower the volume to minimum before connecting your headphones to avoid damage of headphones or your hearing.

WARNING!!!

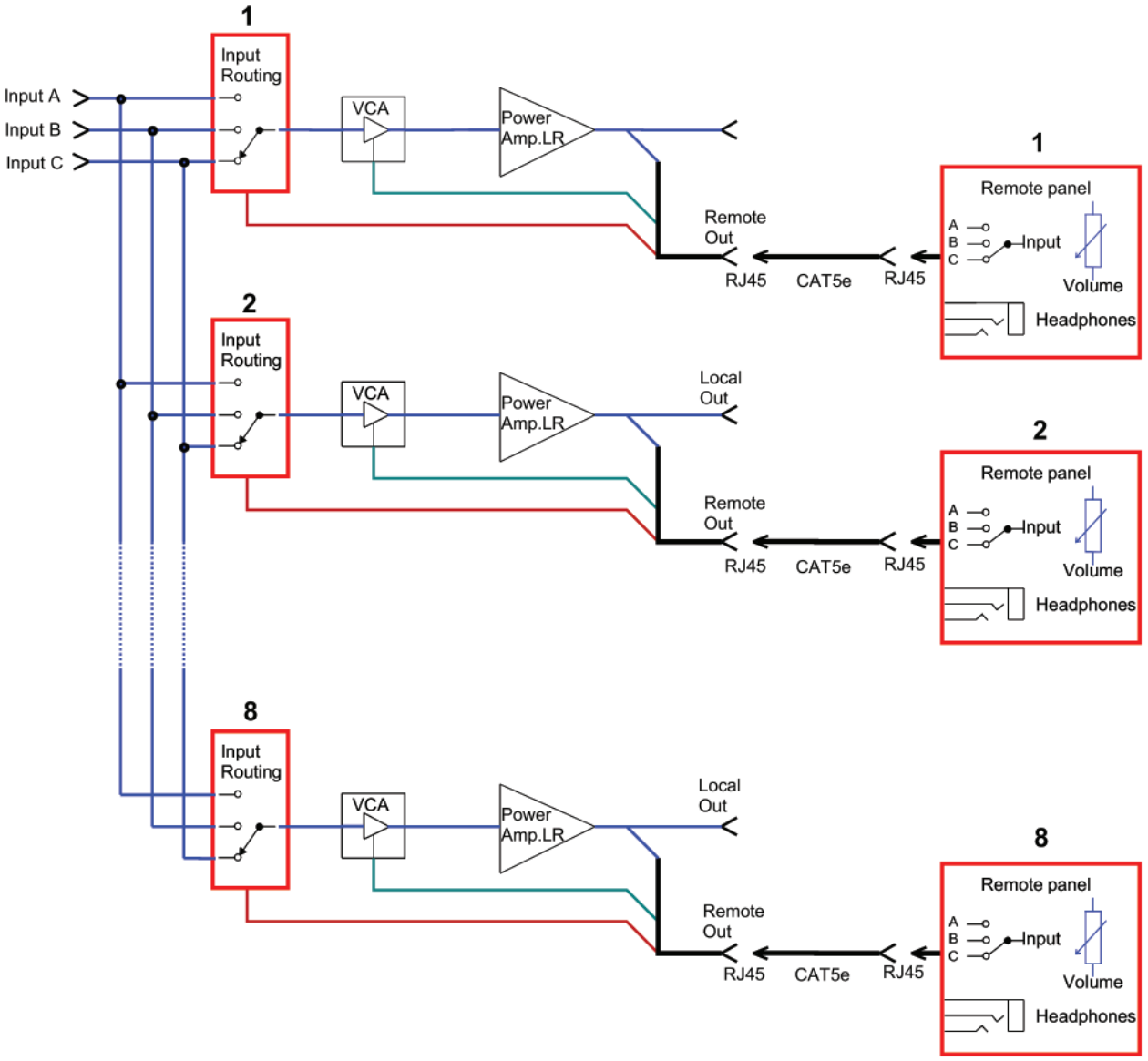
Headphone amplifier is capable of delivering high power to a low-impedance headphones – more than 1W. So please be careful while you have your headphones on your head and always lower the volume to its minimum and then put your headphones on your head and set the desired volume to protect your hearing. With high-sensitivity headphones it can deliver high acoustic pressures!

Specifications

AudioResolution HA-8 VCA	
Input section	
Number of inputs	3x stereo
Input connector	6-pin Phoenix
Input sensitivity	Line level
Nominal input level	0dBu
Input type	Analog
Output section	
Number of outputs	8x stereo
Output connector	3-pin Phoenix (unit) JACK 6,3 stereo (remote)
Remote connector	RJ45
Output noise level	-89dB / 0dB gain -92dB /gain at minimum
THD+N	< 0,03% @15Ω, 1kHz
Output power (THD+N < 1%)	0,9W @15Ω 1,3W @32Ω 0,6W @100Ω 0,1W @600Ω
Frequency response	20Hz - 20kHz /-0,1dB 10Hz - 100kHz /-0,15dB
Cooling	Active
Controlling the amp	
Control	external via remote control panel
Controls	Input source switching, volume
Volume control type	VCA (Voltage Controlled Amplifier)
Max. lenght of remote cable	25m /*longer cable can negatively affect frequency response and maximum output power
Recomended remote cable AWG	AWG24 and better

Power	
Power supply	24V DC /5A
Measurements and weight	
Central unit	
Height in RU	2RU
Dimmensions HxWxL:	88x480x255 mm
Weight	5 kg
Remote control panel	
Dimmensions HxWxL	95x70x50 mm
Weight	0,2 kg

Block diagram



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