

HYDROGEN-SERIES AMPLIFIER

OWNER'S MANUAL

GZHA MINI ONE
GZHA MINI TWO
GZHA MINI FOUR

Features

- High efficient class D mini amplifier
- Extreme compact size
- 2 Ohm stable stereo (MINI TWO / FOUR)
- 1 Ohm stable mono / 2 Ohm linkable (MINI ONE)
- High-level input with Auto-On
- 12 dB adjustable bass boost (@45 Hz) (MINI ONE)
- Adjustable wide-range filters
- Adjustable input sensitivity
- Bass remote control (MINI ONE & MINI TWO)
- Thermal / short circuit / overload protection

Recommended wiring

	GZHA MINI ONE	GZHA MINI TWO	GZHA MINI FOUR
Speaker wires	min 2.5 mm ² / 13 AWG	min 2.5 mm ² / 13 AWG	min 1.5 mm ² / 15 AWG
Power supply wires	min 20.0 mm ² / 4 AWG	min 16.0 mm ² / 6 AWG	min 16.0 mm ² / 6 AWG
High-level input wires	min 1.00 mm ² / 18 AWG		
Remote wire	min 0.75 mm ² / 20 AWG		

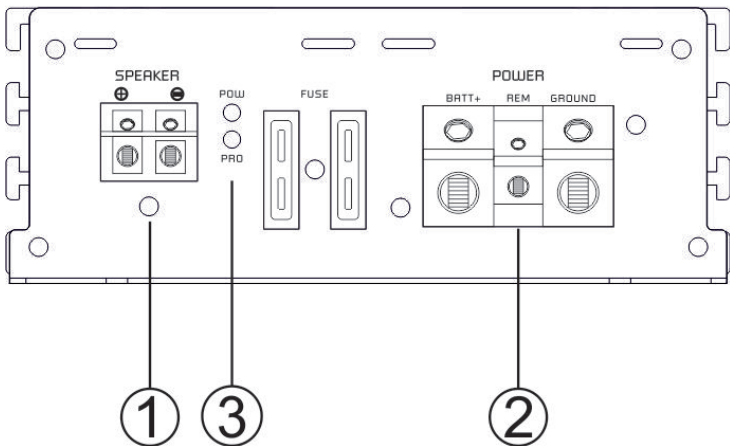
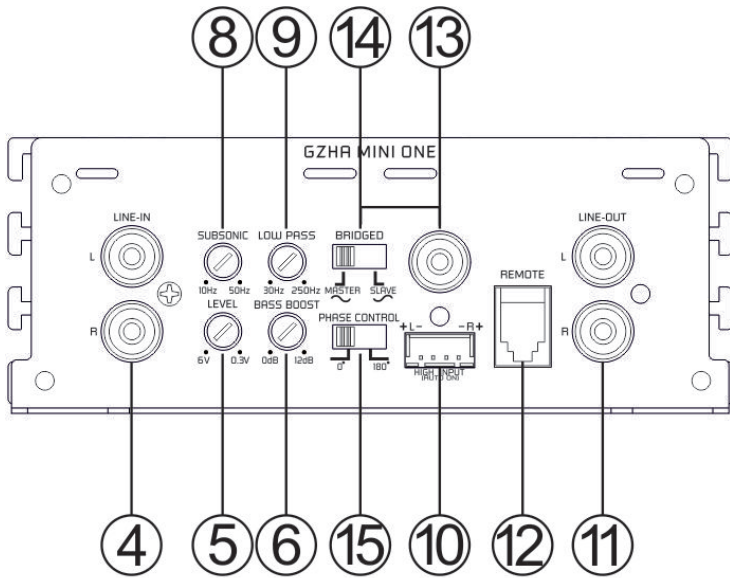
Mounting instructions

- As a precaution, it is recommended to disconnect the vehicles battery before mounting (also note the vehicles manual!)
- The power supply wire (+12 V) has to be protected within max. 20 cm / 8" by a main fuse holder with matching fuse value (Main fuse value has to be equal to the sum of values of the fuses of each connected device)
- If necessary, replace a defective fuse with the identical value only
- Never drill a hole to the vehicles gas tank or brake lines, to wirings or any other important vehicle part!
- Never pass wires over sharp edges or vehicle parts
- Keep the wiring away from the antenna and electronic devices contributing to radio reception
- Lay the power supply wiring always separated from speaker wiring
- The amplifier contains a temperature protection circuit that turns the device off in case of overheating. After a cooling time, it will turn on again automatically. To avoid heat buildup, sufficient air supply for cooling must be provided. Never cover the surface of the heatsink entirely.
- The amplifier should not be mounted on a strongly vibrating part or surface (e.g. subwoofer enclosure)
- If a pre-amplified output (RCA) is available (at the head unit), it is recommended to make use of them

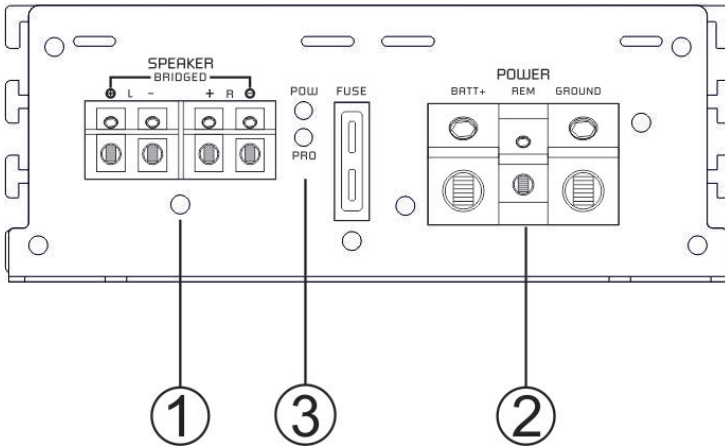
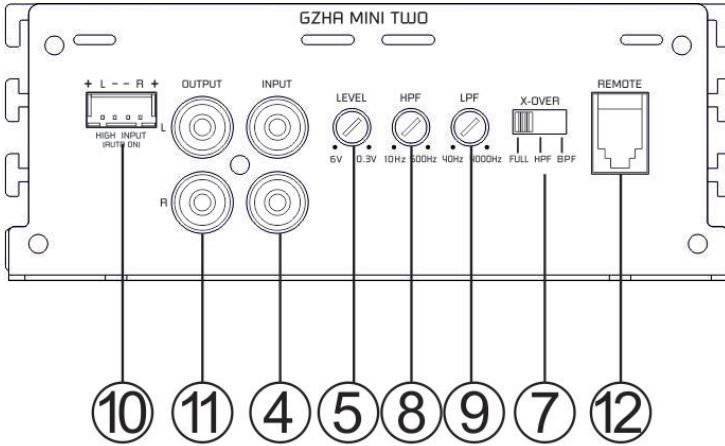
WARNING !

Powerful car audio systems are able to create extremely high SPL similar to real live concert levels. Permanent exposure to excessively high sound levels may cause damage to or loss of the hearing.

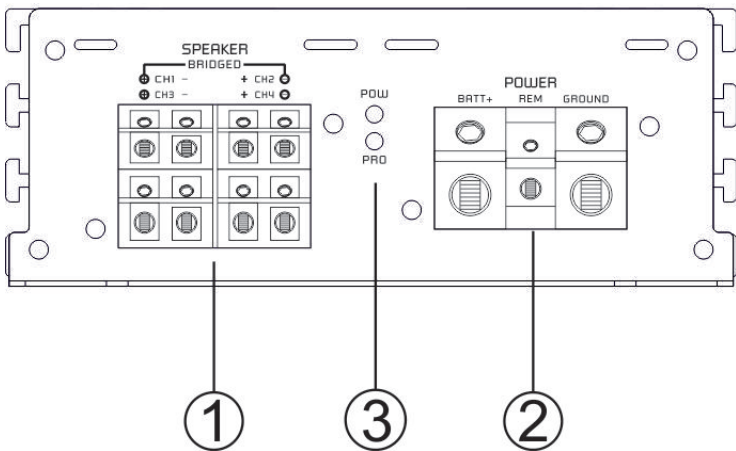
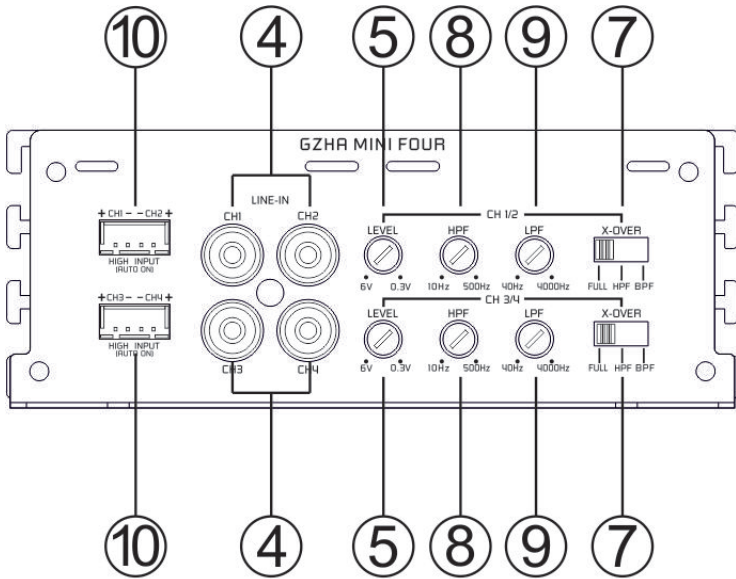
Furthermore, operation of a motor vehicle while listening to audio equipment at high volume levels may impair your ability to concentrate on road traffic and external sounds such as horns, warning signals or emergency vehicles. In the interest of general and own safety, it is recommended to listen to music at appropriately low volume levels while driving.



Controls & Features – GZHA MINI TWO



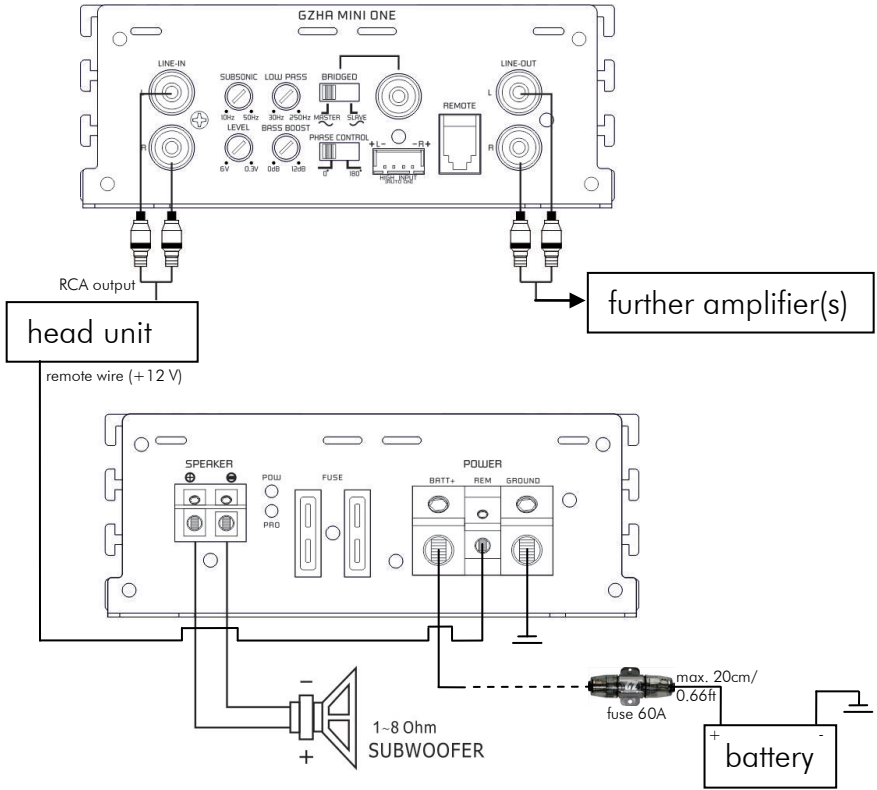
Controls & Features – GZHA MINI FOUR



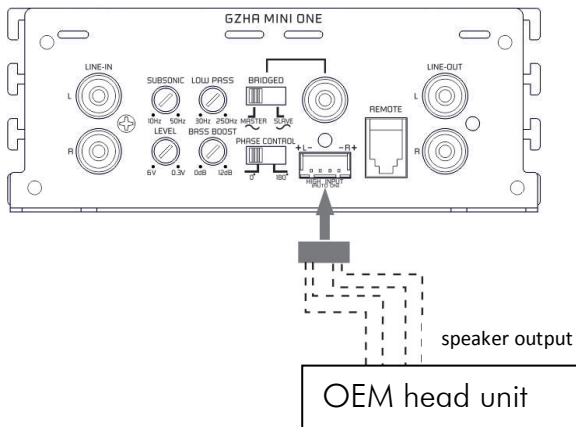
Controls & Features GZHA MINI amplifier series

1	SPEAKER terminal	Speaker connection
2	POWER supply terminal	GROUND -> ground terminal REM -> remote wire / not to be used with high-level input (10) BATT+ -> +12 Volt wire from battery terminal
3	Status LEDs	POW -> green -> ok (correct operation) PRO -> red -> error / protection
4	LINE-IN (RCA input)	Input sockets to connect RCA wires - to avoid any malfunction, it is recommended to use only high quality RCA cables Cable recommendation: GCZZ X-TP series (available lengths 0.57 / 1.14 / 3.14 / 5.49 m) IMPORTANT: High-level and RCA inputs should never be used simultaneously! This may cause serious damage to the amplifier.
5	LEVEL control	Controller to adjust the input sensitivity
6	BASS BOOST control (MINI ONE)	Controller to adjust the bass boost level (0 to +12 dB at 45 Hz)
7	X-OVER mode (crossover) (MINI TWO & MINI FOUR)	To setup the crossover for the required use of the amplifier FULL – entire frequency range will be reproduced HPF – only mid/high frequencies are reproduced according the control (8) BPF* – only low frequencies are reproduced according the control (9) *: Set to BPF filter, the high-pass filter (subsonic) will be activated simultaneously resulting in a band-pass filter (10 Hz 4000 Hz)
8	HIGH-PASS (HPF) control (MINI TWO & MINI FOUR) SUBSONIC (MINI ONE)	To adjust the required crossover point. Frequencies below the selected crossover point will be filtered (10 Hz to 500 Hz / MINI ONE: 10 Hz to 50 Hz). This control will also be activated at BPF (7) mode (MINI TWO & MINI FOUR)
9	LOW-PASS (LPF) control	To adjust the required crossover point. Frequencies above the selected crossover point will be filtered (40 Hz to 4000 Hz / MINI ONE: 30 Hz to 250 Hz)
10	HIGH LEVEL input	Instead of using the RCA input (4), the high-level input can be used. To connect the speaker output of the head unit directly. If used, the amplifier turns on automatically (Auto-On) The REM (remote) input of the power supply terminal remains unused IMPORTANT: High-level input and RCA inputs should never be used simultaneously; this may cause serious damage to the amplifier
11	LINE OUT / OUTPUT (MINI ONE & MINI TWO)	Fullrange RCA output to connect further amplifiers
12	REMOTE socket (MINI ONE & MINI TWO)	To connect the bass remote control
13	BRIDGED socket (MINI ONE)	To connect an RCA cable for link mode operation High quality RCA cable (max. 1.5m / 4.9 ft) is recommended
14	BRIDGED mode switch (MASTER / SLAVE) (MINI ONE)	To select the operation mode of the amplifier (see also LINK MODE diagram)
15	PHASE CONTROL switch (MINI ONE)	To select the phase (0° / 180°) of the connected subwoofer in relation to further speakers (e.g. front speakers)

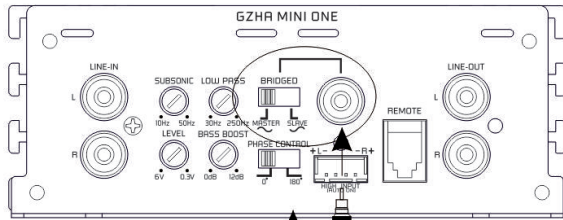
RCA input wiring – GZHA MINI ONE



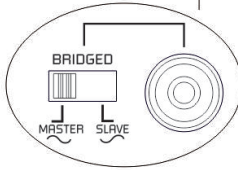
HIGH LEVEL input wiring – GZHA MINI ONE



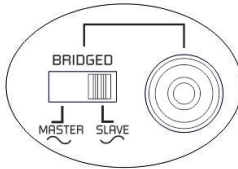
MASTER



A

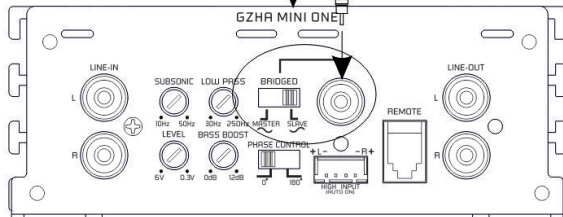


A CONTROL



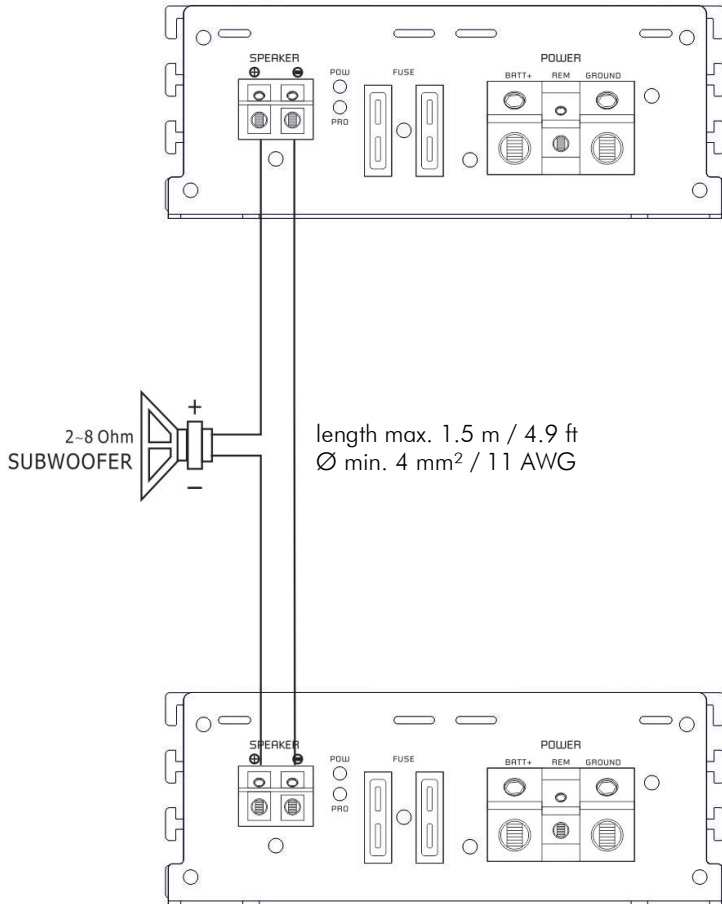
B CONTROL

SLAVE



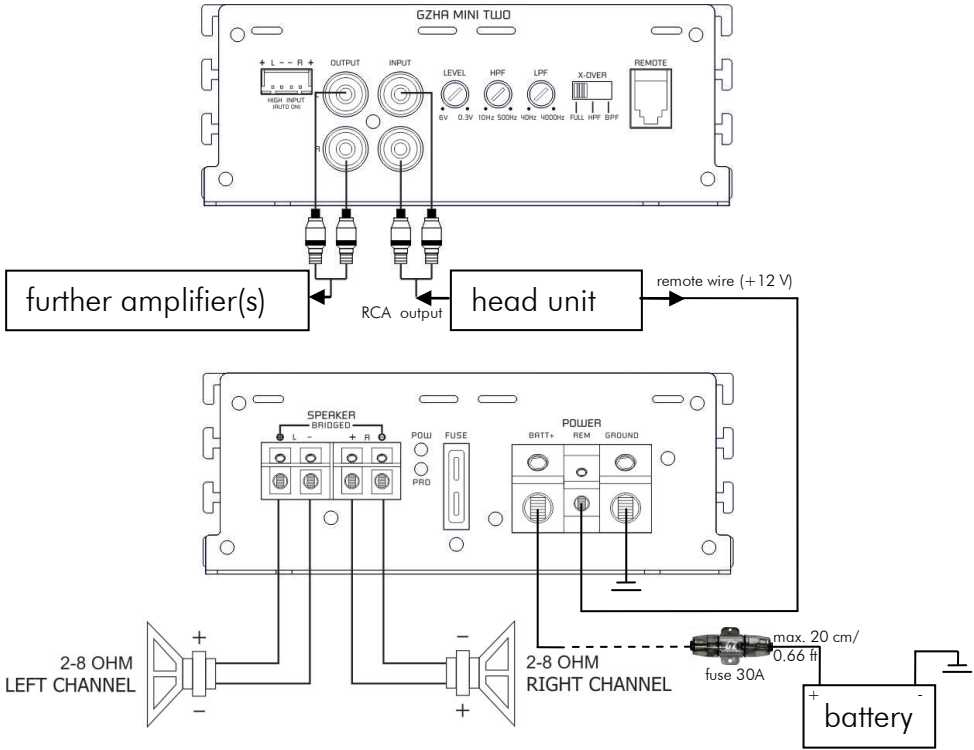
B

MASTER

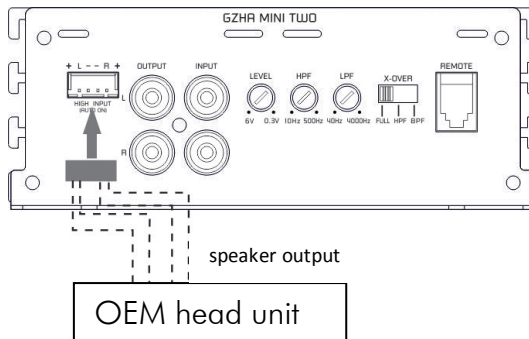


SLAVE

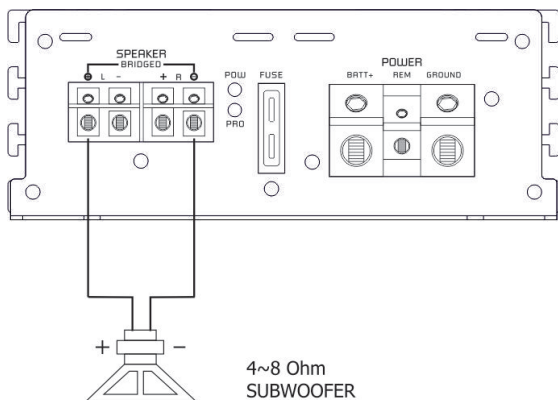
Stereo RCA input & output wiring – GZHA MINI TWO



HIGH LEVEL input wiring – GZHA MINI TWO

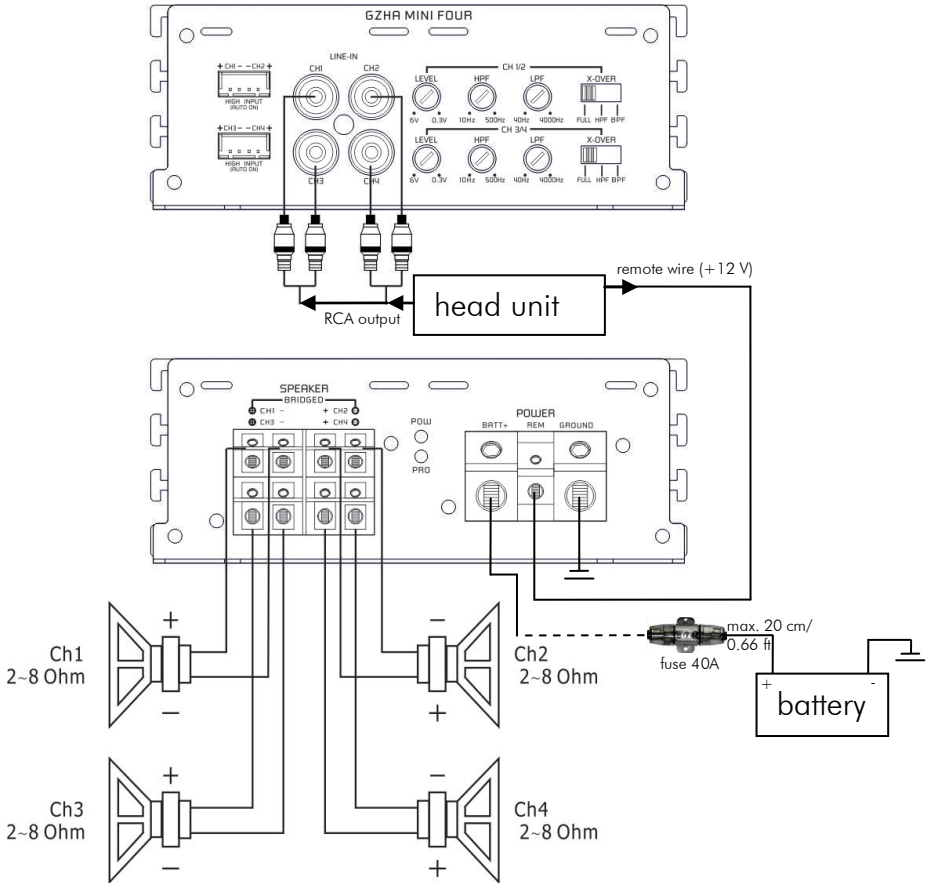


BRIDGED output wiring – GZHA MINI TWO

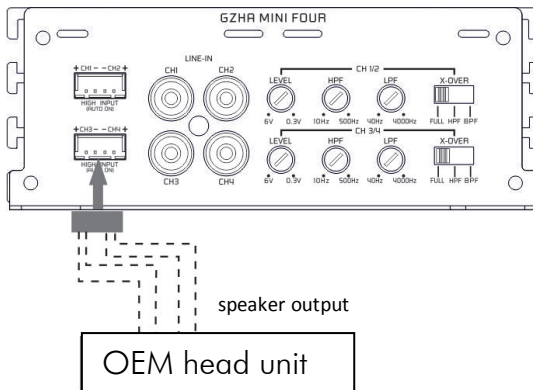


Speaker impedance 4~8 Ohm

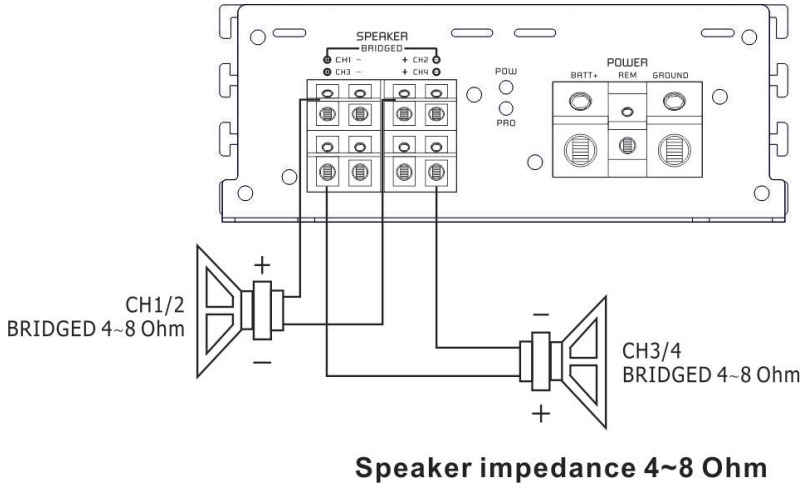
Stereo RCA input & output wiring – GZHA MINI FOUR



HIGH LEVEL input wiring – GZHA MINI FOUR



BRIDGED output wiring – GZHA MINI FOUR



Specifications

Model	GZHA MINI ONE	GZHA MINI TWO	GZHA MINI FOUR
Amplifier type	Mono class D	2 channel class D	4 channel class D
RMS Power @ 4 Ω CEA Standard CEA-2006-A	220 W (1% THD+N)	2 x 130 W (1% THD+N)	4 x 80 W (1% THD+N)
RMS Power @ 2 Ω CEA Standard CEA-2006-A	390 W (1% THD+N)	2 x 230 W (1% THD+N)	4 x 130 W (1% THD+N)
RMS Power @ 1 Ω CEA Standard CEA-2006-A	630 W (1% THD+N)	-	
RMS Power @ 4Ω Gebrückt CEA Standard CEA-2006-A	-	1 x 460 W (1% THD+N) 1 x 550 W (10% THD+N)	2 x 260 W (1% THD+N) 2 x 320 W (10% THD+N)
RMS Power @ 2Ω Linkmode CEA Standard CEA-2006-A	1260 W (1% THD+N) 1500 W (10% THD+N)	-	
Damping factor	> 100		
Low pass filter	30 Hz – 250 Hz (24 dB/Oct)	40 Hz – 4000 Hz (12 dB/Oct)	
High pass filter	10 Hz – 50 Hz (24 dB/Oct)	10 Hz – 500 Hz (12 dB/Oct)	
Band pass filter	10 Hz – 250 Hz (24 dB/Oct)	10 Hz – 4000 Hz (12 dB/Oct)	
Bass boost	0 ~ +12 dB (45 Hz)	-	
Frequency response	10 Hz – 250 Hz (± 1 dB)	5 Hz – 38 KHz (± 1 dB)	
Input sensitivity	300 mV – 6 V ($\pm 5\%$)		
Bass remote	✓	✓	-
Fuse(s)	2x 30A	1x 30A	1x 40A internal
Dimensions w x h x l (mm)	135 x 52 x 210		
Dimensions w x h x l (inch)	5.32 x 2.05 x 8.27		

Trouble shooting guide

Symptoms	Check / Cause	Action
No audible sound	Does the POW LED turn to green?	Check protection fuse(s) of the amplifier Check remote wire connection (RCA input mode) Check +12 Volt power supply wire connection Check ground wire connection
	Did the PRO LED turned to red?	Check for speaker short or amplifier overheating
Device does not turn on	Power supply of the amplifier?	Check power wire or connections
	Remote wire powered? (RCA input mode)	Check remote wire connection to the head unit
No sound on one channel	Speaker wiring undamaged?	Check for short circuit or open connections
	Input signal on both RCA leads?	Reverse left and right RCA inputs to check the audio input signal
Device turns off at medium / high volume	Load impedance of each speaker correct?	Check if each speaker load impedance matches the technical specifications of the amplifier
Status LED turned on red	Temperature protection circuit active	Decrease head units volume / wait for cooling
	Speaker wires short / speaker damaged	Check speaker / wires and insulate if necessary

Terms of warranty

The limited warranty for this product is covered by Ground Zero's local distribution partners and their terms and conditions. For further information contact your local retailer or distributor.

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