BZB GEAR®
Solutions to Amplify Your World™

BG-AMPC40

40 Watt 70V/100V Stereo/Mono 2-Channel Audio Amplifier

with 3 Inputs

User Manual

TABLE OF CONTENTS

Statement

Please read these instructions carefully before connecting, operating, or configuring this product. Please save this manual for future reference.

Safety Precaution

- To prevent damaging this product, avoid heavy pressure, strong vibration, or immersion during transportation, storage, and installation.
- The housing of this product is made of organic materials. Do not expose to any liquid, gas, or solids which may corrode the shell.
- Do not expose the product to rain or moisture.
- Unplug this device during lightning storms
- Clean only with a soft dry microfiber cloth.
- To prevent the risk of electric shock, do not open the case. Installation and maintenance should only be carried out by qualified technicians.
- Do not use the product beyond the specified temperature, humidity, or power supply specifications.
- This product does not contain parts that can be maintained or repaired by users. Damage caused by dismantling the product without authorization from BZBGEAR is not covered under the warranty policy.
- Installation and use of this product must strictly comply with local electrical safety standards.
- Only use accessories specified by the manufacture
- Product specifications may be subject to technical upgrades without further notice
- Do not twist or pull by force ends of the optical cable. It can cause malfunction.
- Do not hot plug when it is working.
- Information on disposal for scrapped devices: do not burn or mix with general household waste, please treat them as normal electrical wastes.

Introduction

The BG-AMPC40 is a 40 Watt amplifier (Class-D) with alternative outputs of 70V or 100V. It has 2 stereo inputs (1x 3.5mm stereo mini, 1x L/R RCA pair), 1 digital input, and 1 balanced MIC. It is integrated with a ducking function, EQ control, MIC mixer, and more. The MIC input supports 3 different connection types which are with a condenser MIC, a dynamic MIC, and line audio input.

Features

- Mono audio output at 40 Watt.
- Switchable between 70V and 100V.
- Ducking function.
- 16 ID codes for controlling multiple amplifiers.
- 3-level MIC input, supports condenser microphone, dynamic microphone, and wireless microphone.
- MIC port can support balance/unbalance signal as well as external noise suppression.
- Two stereo audio inputs and one digital audio input. Selectable by button, IR remote, and RS232.
- Volume/Bass/Treble controlled by buttons, IR remote, and RS232.
- Fast switching speed for good performance.
- Convection cooler; fan is not needed.
- LED indicator for power and working status.
- Antistatic case design to provide protection for long-term and stable performance.

Packing List

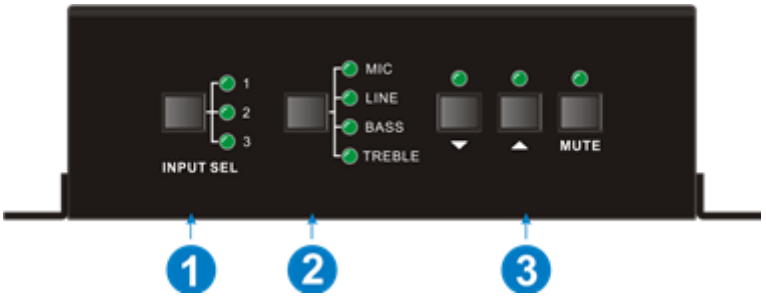
- 1x 40 Watt Power Amplifier
- 2x Mounting ears with 4 Screws
- 4x Plastic Cushions
- 2x Pluggable Terminal Blocks
- 1x RS232 Cable
- 1x Power Adapter (DC 24V 2.71A)
- 1x User Manual
- 1x Quick Start Guide

Technical Specifications

Audio Input	
Input	(2) Stereo Audio (1) MIC (1) Digital Fiber Audio
Input Connector	(2) RCA (1) 3.5mm Jack (1) 3-pole 3.81mm Captive Screw Connector (1) SPF Fiber Connector
Input Impedance	>10KΩ
Audio Output	
Output	(1) Mono Amplifier
Output Connector	(1) 3-pole 3.81mm Captive Screw Connector
Output Type	Constant voltage 70V or 100V.
Audio General	
Frequency Response	120Hz ~ 20KHz
CMRR	>70dB@20Hz~20KHz
SNR	80 dB (Max)
Bandwidth	120Hz ~ 20KHz
Rated Power Output	40Watt
THD + Noise	1%@1KHz, 0.3%@20KHz at nominal level
Voltage Gain	26dB
Control Function	
RS232 Control	(1) 3-pole 3.81mm Captive Screw Connector
Front Panel Control	Buttons
ID Code Control	16 ID Codes for control.
Optional	IR Remote & TCP/IP controlled by programmable interface
General	
Temperature	-10 ~ +40°C
Humidity	10% ~ 90%
Power Supply	DC 24V 2.71A Power Adapter
Standby Power Consumption	5W
Case Dimension	W130 x H44 x D144mm (1U high)
Product Weight	860g

Operation Controls and Functions

Front Panel

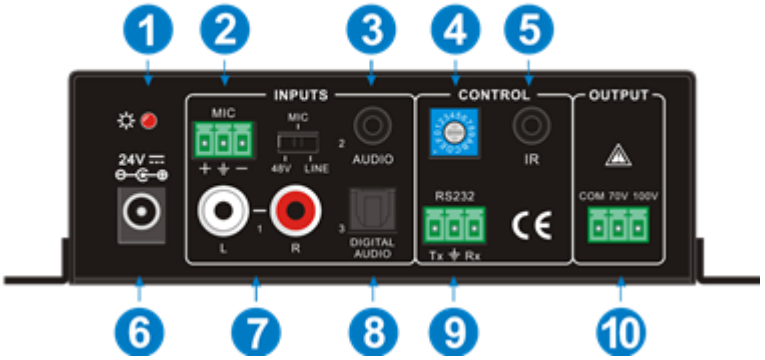


1. **Audio Input Selection**: Press the INPUT SEL button to select an input audio source, After choosing an audio source, the corresponding LED indicator will illuminate. No.1 is for dual mono audio input (2 RCA connectors for L&R), No.2 is for stereo audio input (3.5mm mini jack), and No.3 is for digital fiber audio input.

2. **Audio Control**: Select the MIC, Line, Bass, or Treble with this button to then be able to control their volume levels.

3. **Volume Adjustment**: To turn up, down, or mute the selected audio.
   ▽: Turn down the volume
   △: Turn up the volume
   MUTE: Mute the output

Rear Panel



1. **Power Indicator**: Illuminates red when power is connected.

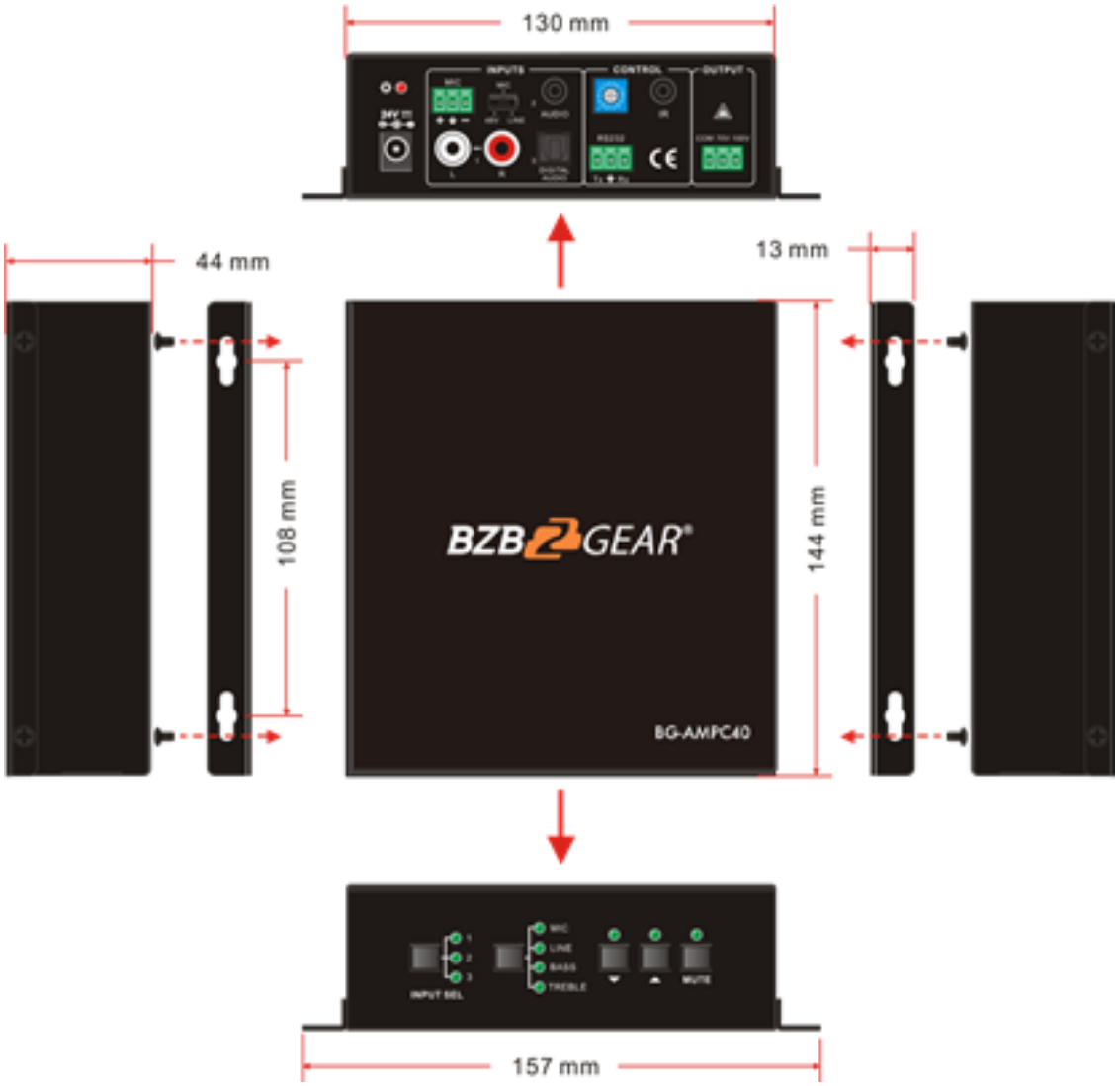
2. **Microphone input port**: 3-pin phoenix connector for microphone input. The switch on the right side is used to select the input type: 48V (for condenser microphone), MIC (for dynamic microphone), and LINE (for line audio).

3. **Audio Inputs**: 3.5mm mini jack for stereo audio input. It can be connected with audio source devices (e.g., DVD player).

4. **ID Code**: Turn the dial to select 1 of 16 codes which range from 0 to F (hexadecimal). It is used to manage multiple units with PC control software.

5. **IR**: To connect with the IR receiver. Increases the range of the IR remote if the main unit is out of line of sight.
6. **Power Port**: Connect with the power adapter (DC24V).
7. **L+R RCA**: Dual-mono audio input.
8. **Digital Audio Input**: Fiber connector for digital audio input (PCM format only).
9. **RS232**: 3-phoenix connector for serial control. It can be connected with a PC to control the amplifier.
10. **Audio Output**: To connect with audio output devices such as speakers (to select 70V or 100V depends on the input voltage of the speakers). COM is for grounding (GND).

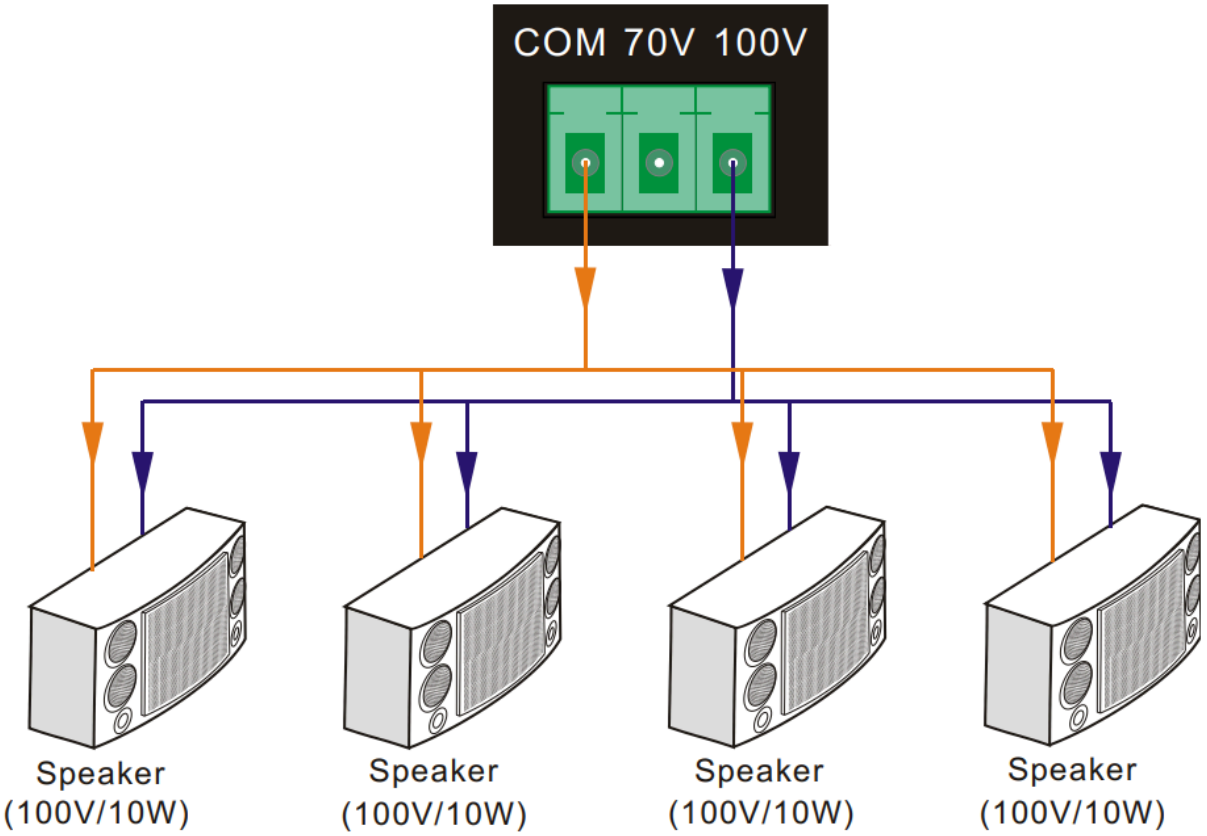
Drawing



Audio Output

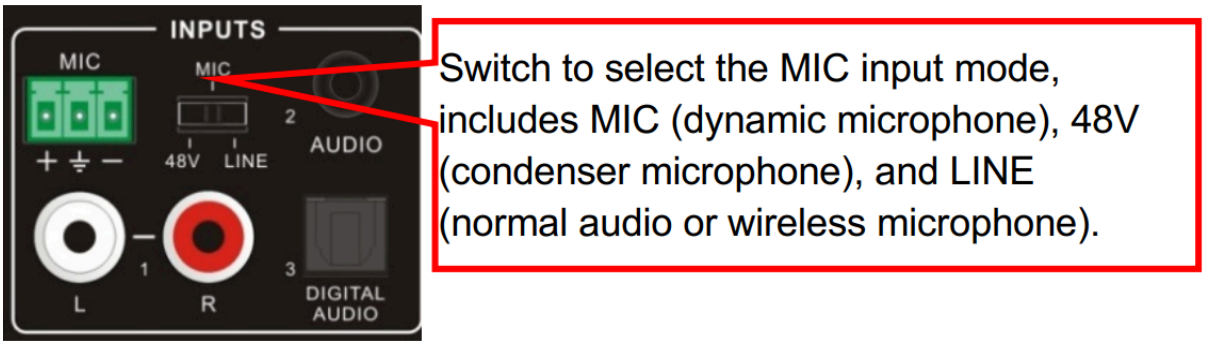
The amplifier supports mono audio output, and the output voltage is 70V or 100V. With its dual-purpose design, it can be applied in different areas. The end COM port is for ground\. The amplifier outputs a mono audio signal with a rated power at 40 Watts and can be connected with several speakers in parallel wiring. Total power must not be more than 40 Watt.

The following figure shows how to connect with the speakers. Here we take the 100V/10W speakers for each as an example.



Audio Input

The amplifier provides 2 stereo audio inputs: one microphone input and one digital fiber audio input. The following figure shows the audio input ports.



- **48V phantom power input**

When the switch turns to “48V” (it has high input impedance and high sensitivity in this mode), the MIC input will provide a 48V phantom power. This is usually used for powering condenser microphones. Connection is: “+” connects to positive, “-” connects to negative, and “⏚” to ground.

Note: In this mode, only condenser microphones can be connected.

- **MIC input**

When the switch turns to “MIC” (it has a wide frequency response in this mode), the microphone input is used for connecting dynamic microphones. There are two different connections:

a) Unbalanced connection:
“+” and “⏚” connect to ground and “-” connects to signal.
“-” and “⏚” connect to ground and “+” connects to signal.

b) Balanced connection: “+” connects to positive, “-” connects to negative, and “⏚” connects to the ground.

- **LINE input**

When the switch turns to “LINE” (it has wide frequency response in this mode), the microphone input is used for connecting normal audio or wireless microphone outputs. There are two different connections:

a) Unbalanced connection:
“+” and “⏚” connect to ground and “-” connects to signal.
“-” and “⏚” connect to ground and “+” connects to signal.

b) Balanced connection: “+” connects to positive, “-” connects to negative, and “⏚” connects to the ground.

- **Digital Audio Input**

The amplifier features a TOSLINK input to connect with a digital audio source device. With this connection the audio signal can be transmitted more reliably and can be transmitted over a long distance without distortion.

Note: This digital audio input can support/decode PCM format signal only.

System Applications

The amplifier can be applied in different settings such as classrooms, small meeting rooms, lecture halls, bars, and hotels.

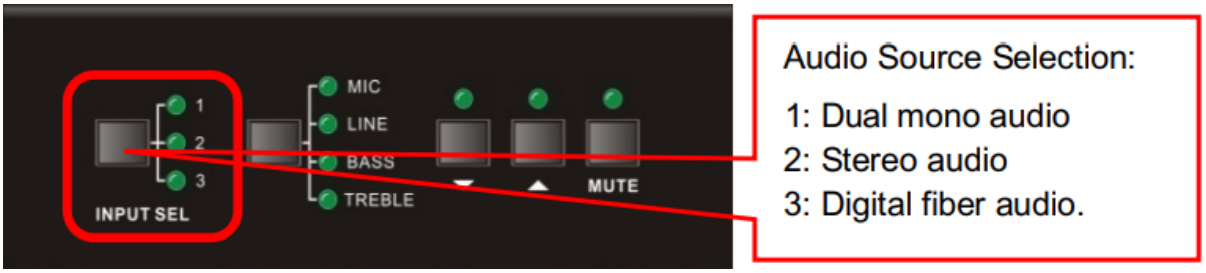
System Operation

Operation of Front Panel

The buttons provide control for volume/EQ and switching. The LED indicators show status. The following content explains audio switching and EQ control in detail.

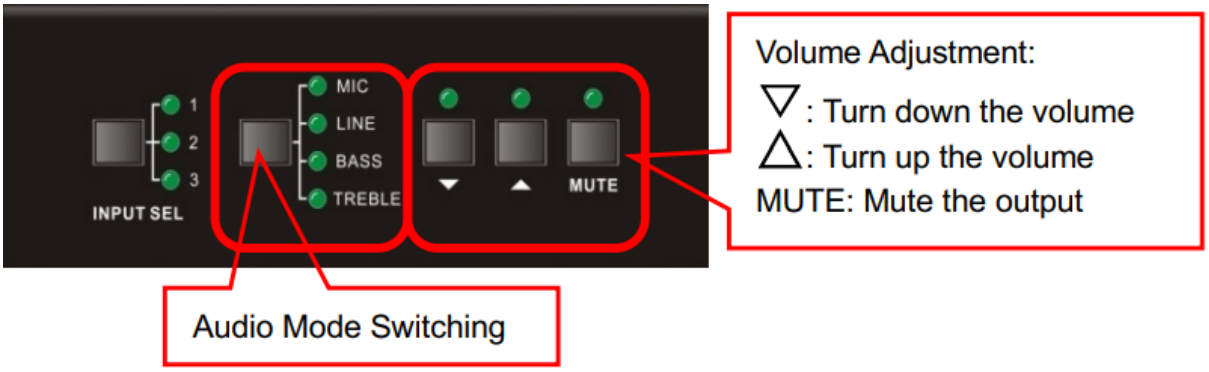
Audio switching

There are three switchable audio inputs: one 2xRCA input, one 3.5mm jack input, and one digital fiber audio input.



Volume/EQ controlling

The line volume and MIC volume can be controlled by the buttons. The MIC Volume/LINE volume/LINE bass/LINE treble will be selected by the buttons and controlled up/down/mute by the function buttons. Please check the picture below:



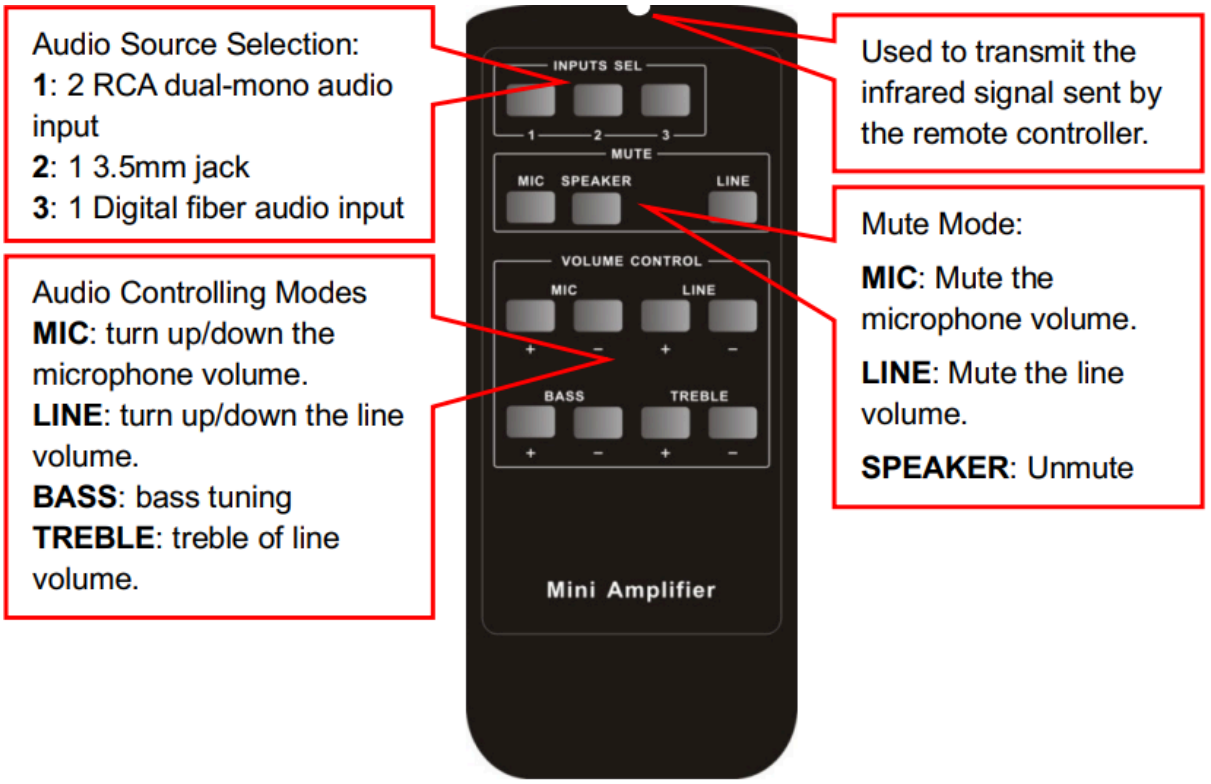
For example, to turn up the line volume, select “LINE” and then press the button “△”.

Operation of IR Remote

The amplifier can be connected to an IR Receiver and controlled via IR remote.

Notice: The IR Receiver and IR remote are sold separately.

- **IR Remote**



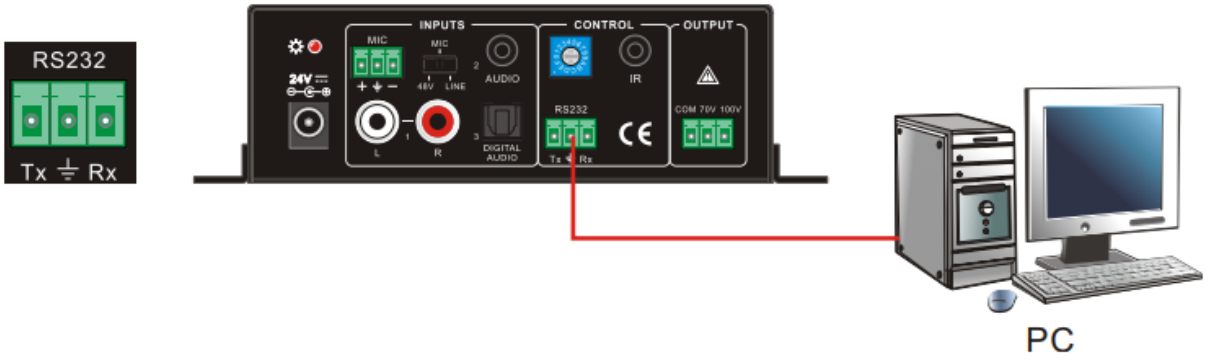
- **IR Receiver**

RS232

Connection with Computer

RS232 control can be utilized via a computer attached with a USB to serial adapter. To control the amplifier, users should use a 3-pole male captive screw to 9-pin HD female connector.

Connection of RS232 Port:



Communication Protocol and Command Codes

Communication Protocol: RS232 Communication Protocol

Baud rate: 9600 Data bit: 8 Stop bit: 1 Parity bit: none

Command	Function Description	Feedback Code
1A1.	Switching the audio to input 1	A: 1 -> 1
2A1.	Switching the audio to input 2	A: 2 -> 1
3A1.	Switching the audio to input 3	A: 3 -> 1
0A0.	Mute Audio of MIC and Line out	Mute
1A0.	Mute audio of MIC	Mute MIC
2A0.	Mute audio of line out	Mute LIN
3A0.	Enable noise gate.	Gate On
4A0.	Disable noise gate.	Gate Off
0A1.	Unmute Audio	Unmute Audio
600%	Checking the working status	A: 1 -> 1 Volume of MIC : 50 Volume of LINE : 50 Bass of LINE : 4 Treble of LINE : 4 Ducking Off
601%	MIC volume up	Volume of MIC: 51
602%	MIC volume down	Volume of MIC: 51
603%	Line volume up	Volume of LINE: 51
604%	Line volume down	Volume of LINE: 51
605%	Bass level up	Bass of LINE: 4
606%	Bass level down	Bass of LINE: 4
607%	Treble level up	Treble of LINE: 4
608%	Treble level down	Treble of LINE: 4
609%	Initialization, back to the default setting	Init OK
610%	Enable/disable the ducking function.	Ducking off/Ducking on
4[x][x]%	Preset the volume level of ducking function. [xx] arranges from [00] to [60]. 61 degrees in total.	Ducking of LINE: 50
5[x][x]%	Preset MIC volume, [xx] arranges from [00] to [60]. 61 degrees in total.	Volume of MIC: 50
7[x][x]%	Preset line volume, [xx] arranges from [00] to [60]. 61 degrees in total.	Volume of LINE: 50
8[x][x]%	Preset the bass level, [xx] arranges from [00] to [08]. 9 degrees in total.	Bass of LINE: 4
9[x][x]%	Preset the treble level, [xx] arranges from [00] to [08]. 9 degrees in total.	Treble of LINE: 4

Notice:

- The letter inside bracket [ ] is the variable code, which is changeable.
- The bracket [ ] is not included to the RS232 commands.
- Any dot "." after the letters is part of the commands.

- **Ducking function:**

  When input with MIC, the volume of the line audio will be automatically turned down to the preset volume level. If there is no input MIC audio signal after 5 seconds, the volume will be automatically turned up to the original level. If you need to disable/enable the ducking function, just send the command “610%” again.

- **ID coding:**

  The ID codes of the amplifier ranges from 0 to F (hexadecimal). When sending RS232 commands, please take notice of the address of the ID code.

  If the address of the ID code is 0, any RS232 command is available.

  If the address is in 1~F, it has one unique ID code (if the ID code is not the same with the address, no RS232 command will work).

  While the ID code is in 1~F, please add “ID/” before sending the command.

  For example, if the ID code is 5, the RS232 command needed is “604%”. The correct command is in this format: 5/604%.

  There is no need to add “ID/” before the command when the ID code is 0.

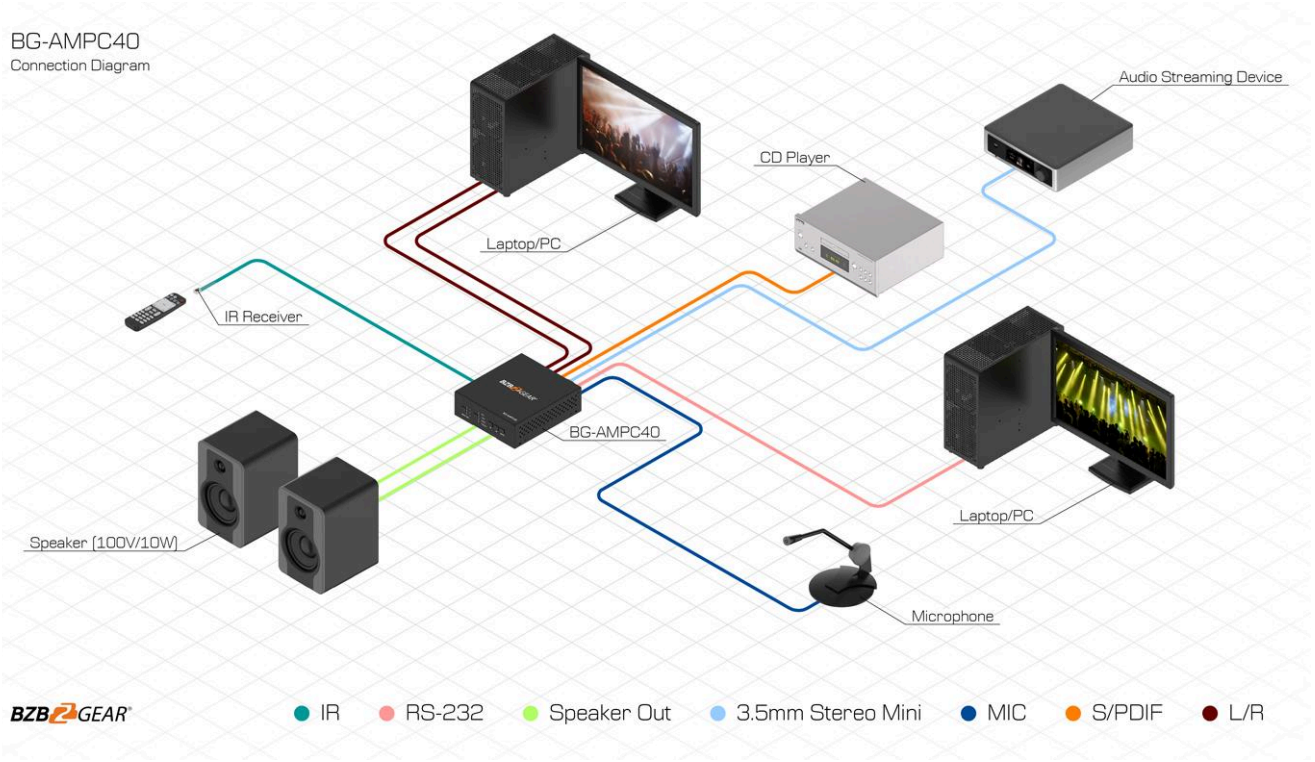
Examples:

- Switching the input 2 to the line out, the command is: 2A1.
- Turning up the volume of line audio, the command is: 603%
- Preset the MIC volume to “21” degree, the command is: 521%
- Checking the working status of the amplifier, the command is: 600%
- If the ID code is 0, sending command 601% is able to turn up the MIC volume.
- If the ID code is 2, sending command 601% will not work and the MIC volume remains unchanged. The right command is 2/601%.

Troubleshooting and Maintenance

Problems	Potential Causes	Solutions
No output audio	No signal at input/ output end	Check input/ output signal with an oscilloscope or a multimeter.
	Failed cable connection	Change for another cable.
	Broken unit	Send it to the dealer for repair.
POWER indicator doesn't work or no respond to any operation	Failed power connection	Make sure the power cord connection is good
Static becomes stronger when connecting the video connectors	Bad grounding	Check the grounding and make sure it is connected well.
Output audio interference		
Cannot control the device with front panel buttons, RS232 port, or IR remote	Broken unit	Send it to the dealer for repair.

Application Example



Tech Support

Have technical questions? We may have answered them already!

Please visit BZBGEAR's support page (bzbgear.com/support) for helpful information and tips regarding our products. Here you will find our Knowledge Base (bzbgear.com/knowledge-base) with detailed tutorials, quick start guides, and step-by-step troubleshooting instructions. Or explore our YouTube channel, BZB TV (youtube.com/c/BZBTVchannel), for help setting up, configuring, and other helpful how-to videos about our gear.

Need more in-depth support? Connect with one of our technical specialists directly:

Phone	**Email**	**Live Chat**
1.888.499.9906	support@bzbgear.com	bzbgear.com

Limited Product Warranty Terms

Pro Line: 5-year warranty from the date of purchase for AV/Broadcasting products bought on or after August 1, 2024.

Essential Line: 3-year warranty from the date of purchase for AV/Broadcasting products bought on or after August 1, 2024.

Cables: Lifetime Limited Product Warranty.

For complete warranty information, please visit bzbgear.com/warranty.

For questions, please call 1.888.499.9906 or email support@bzbgear.com.

Mission Statement

BZBGEAR is a breakthrough manufacturer of high-quality, innovative audiovisual equipment ranging from AVoIP, professional broadcasting, conferencing, home theater, to live streaming solutions. We pride ourselves on unparalleled customer support and services. Our team offers system design consultation, and highly reviewed technical support for all the products in our catalog. BZBGEAR delivers quality products designed with users in mind.

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