



User Manual

TL-A80-50W

50 Watt Power Amplifier



All Rights Reserved

Version: TL-A8O-50W_161027

Preface

Read this user manual carefully before using this product. Pictures shown in this manual is for reference only, different model and specifications are subject to real product.

This manual is only for operation instruction only, not for any maintenance usage.

Trademarks

Product model and logo are trademarks. Any other trademarks mentioned in this manual are acknowledged as the properties of the trademark owner. No part of this publication may be copied or reproduced without prior written consent.

FCC Statement

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. It has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a commercial installation.

Operation of this equipment in a residential area is likely to cause interference, in which case the user at their own expense will be required to take whatever measures may be necessary to correct the interference

Any changes or modifications not expressly approved by the manufacture would void the user's authority to operate the equipment.



SAFETY PRECAUTIONS

To insure the best from the product, please read all instructions carefully before using the device. Save this manual for further reference.

- Unpack the equipment carefully and save the original box and packing material for possible future shipment
- Follow basic safety precautions to reduce the risk of fire, electrical shock and injury to persons.
- Do not dismantle the housing or modify the module. It may result in electrical shock or burn.
- Using supplies or parts not meeting the products' specifications may cause damage, deterioration or malfunction.
- Refer all servicing to qualified service personnel.
- To prevent fire or shock hazard, do not expose the unit to rain, moisture or install this product near water.
- Do not put any heavy items on the extension cable in case of extrusion.
- Do not remove the housing of the device as opening or removing housing may expose you to dangerous voltage or other hazards.
- Install the device in a place with fine ventilation to avoid damage caused by overheat.
- Keep the module away from liquids.
- Spillage into the housing may result in fire, electrical shock, or equipment damage. If an object or liquid falls or spills on to the housing, unplug the module immediately.
- Do not twist or pull by force ends of the optical cable. It can cause malfunction.
- Do not use liquid or aerosol cleaners to clean this unit. Always unplug the power to the device before cleaning.
- Unplug the power cord when left unused for a long period of time.
- Information on disposal for scrapped devices: do not burn or mix with general household waste, please treat them as normal electrical wastes.

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1. Introduction

1.1 Introduction to TL-A8O-50W


TL-A8O-50W is a 50 Watt Power Amplifier (Class-D) with low-impedance output (8 ohms). It has [2] analog stereo inputs and [1] digital input. It features switchable stereo or mono output modes. It includes powerful functions including EQ and a robust list of control options.

1.2 Features

- Switchable between stereo (8 ohm) and mono (4 ohm) output.
- Stereo audio output at 50 watts. Mono audio output at 100 watts.
- Two stereo audio inputs and one digital audio input, switchable by button, IR remote, RS232, & TCP/IP.
- Volume/Bass/Treble controllable by rotary knob, IR remote, RS232, & TCP/IP.
- Audio loop output.
- Intuitive LED indicators for input source, control and volume setting.
- Web-based GUI.
- Power off memory.

1.3 Package List

- | | |
|-------------------|---|
| ✓ 1 x TL-A8O-50W | ✓ 2 x Detachable Mounting Ears |
| ✓ 4 x Screws | ✓ 2 x Pluggable Terminal Blocks (1 3-pin & 1 4-pin) |
| ✓ 1 x IR Remote | ✓ 1 x Power Adapter (DC 33V 4A) |
| ✓ 1 x User manual | ✓ 1 x IR Receiver (5V, without carrier) |

 Please confirm if the product and the accessories are all included, if not, please contact the your local distributor.

2. Panel Description

2.1 Front Panel

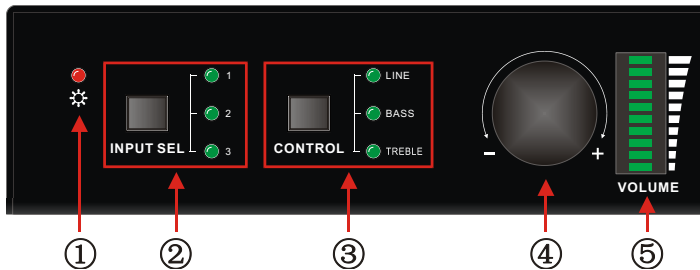


Figure 2- 1 Front Panel

No.	Name	Description
①	Power LED	Turns red when power is connected
②	Input Selection	Audio source selection
③	Control	Selector for adjusting the volume of the Line or the level of Bass and Treble with this button
④	Volume Knob	<ul style="list-style-type: none"> ● Press to mute/unmute the audio ● Rotate the knob to adjust volume; volume bars will change accordingly <ul style="list-style-type: none"> ➤ Clockwise Rotation: Volume up ➤ Anticlockwise Rotation: Volume down
⑤	Volume Bars	Indicate real-time volume setting, 10 bars in total. No volume LEDs will be lit when the audio is muted.

Operation Format: “INPUT SEL” + “CONTROL” + “Volume Knob”

Example: To adjust bass audio of input 3 -> choose input 3 -> choose bass -> adjust the volume knob.

2.2 Rear Panel

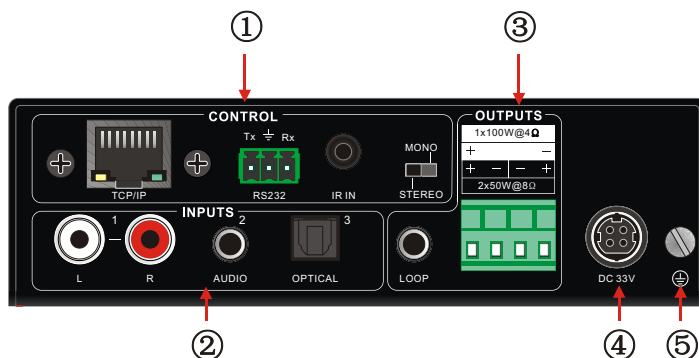


Figure 2- 2 Rear Panel

No.	Name	Description
①	CONTROL	TCP/IP: connect with control device to enable IP control via web-based GUI & TCP/IP communication software. Indicators will blink when connected to control device and communicating normally.
		RS232: 3-pole captive screw connector for serial control, it can be connected with PC (Use a 3-pole captive to 9 pin female D connector and serial control software) to control TL-A8O-50W
		IR IN: To connect with the IR receiver, works with the IR remote.
		Output Switch: Set to STEREO or MONO to enable corresponding output mode
②	INPUTS	Audio inputs area, 3 audio inputs in total, including 1 stereo audio, 1 analog audio and 1 optical audio
③	OUTPUTS	LOOP: analog audio loop output port, available only when input signal is analog stereo audio
		Audio Output: including stereo audio (2x50W@8Ω), or mono output (1x100W@4Ω)
④	DC 33V	To connect the power adapter (DC 33V 4A)
⑤	GND	Connect to ground



Set the Output Switch to the proper speaker configuration prior to applying power to the device.

3. System Connection

3.1 Usage Precautions

- 1) Speakers must be connected before powering the amp on.
- 2) All devices should be connected before powering the amp on.
- 3) Use straight-thru Cat5e/Cat6 with TIA/EIA T568B terminations to connect TCP/IP port.

3.2 System Diagram

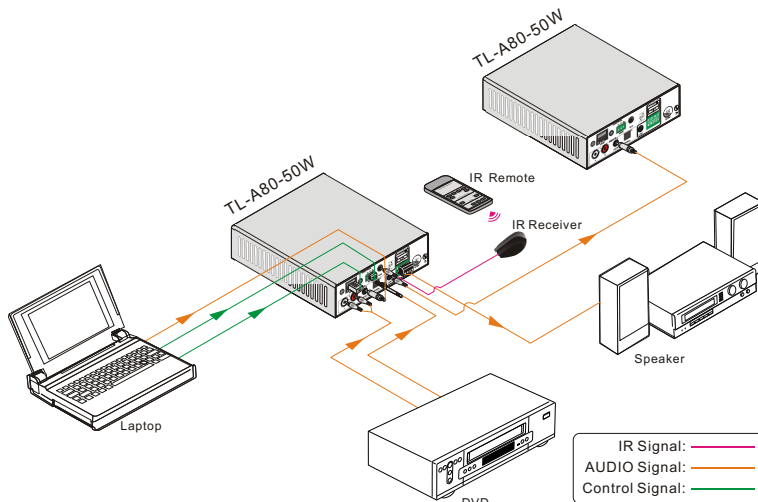


Figure 3- 1 System Diagram

3.3 Connection Procedure

- Step1.** Connect audio sources to the **INPUT** ports of the device with quality audio cables.
- Step2.** Set the Output Switch to the desired mode and connect the speakers to audio output port (Specified in 3.4 Audio Output Connection).
- Step3.** (optional) Insert an IR receiver (5V, without carrier) to **IR IN** to enable IR control.
- Step4.** (optional) Connect a control device (e.g. a PC) to **RS232** port to enable serial control.
- Step5.** (optional) Connect a control device (e.g. a PC) to **TCP/IP** port to enable IP control.
- Step6.** Plug DC 33V power adaptor to the power port of TL-A80-50W.

3.4 Audio Output Connection

3.4.1 Stereo output (default): 2 x 50 Watts at 8 Ohms

To enable stereo 2 x 50 Watts at 8 Ohms output, set the output switch to STEREO and connect the speakers as shown in the figure below.

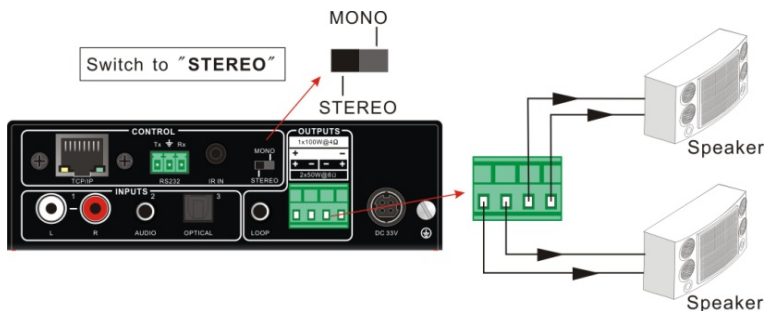


Figure 3- 2 Stereo Output Connection

3.4.2 Mono output: 1 x 100 Watts at 4 Ohms

To enable mono 1 x 100 Watts at 4 Ohms output, set the output switch to MONO and connect the speakers as shown in the figure below.

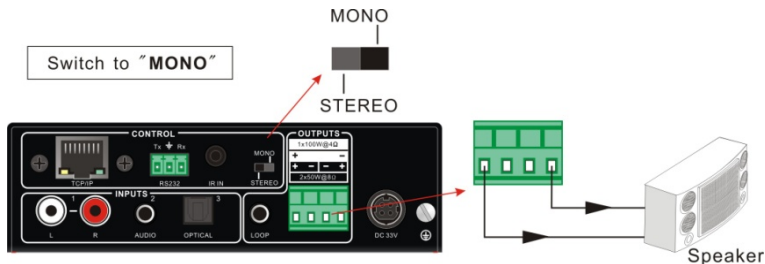


Figure 3- 3 Mono Output Connection

3.5 Loop Connection

TL-A80-50W features an analog LOOP port for audio signal loop output. A maximum of 255 units can be looped within the same system. Connect the TL-A80-50W as shown in the figure below.

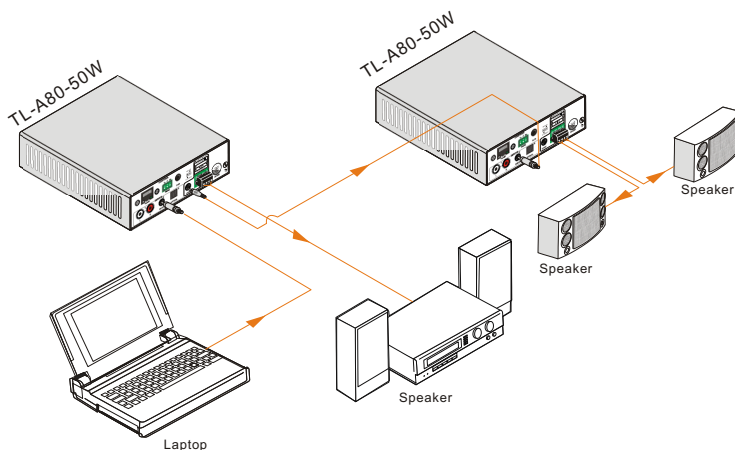


Figure 3- 4 Loop Connection

The audio signal sent to the first TL-A80-50W is cascaded to another connected TL-A80-50W, which enables multiple TL-A80-50W share the same audio source.



1. Audio loop output is available only when the first TL-A80-50W is using an analog audio input as the source.
2. Audio control operations, such as EQ and mute, are not available to the looped audio signal.

3.6 Application

TL-A80-50W can be used in different applications, such as classrooms, small meeting rooms, lecture halls, bars and hotels etc.

4. System Control

4.1 Front Panel Button Control

Front panel buttons provide direct audio control including input source selection and audio effect adjustment.

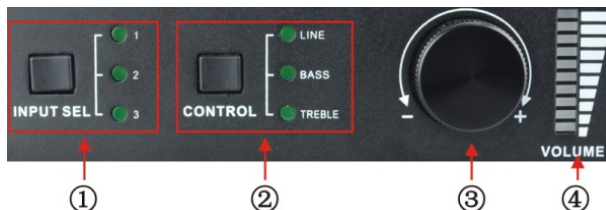


Figure 4- 1 Front Panel Buttons

Operation Format: Input Sel + Control + Volume Knob (indicators and volume bar will display real-time operation)

➤ **Input selection (area ①):**

Press **INPUT SEL** to cycle through the three inputs. The corresponding LED will light to indicate the selection. The input number selection and the associated input are:

- 1: dual-mono RCA input
- 2: 3.5mm jack input
- 3: digital fiber audio input

➤ **Control (EQ management) (area ②):**

The LINE volume, bass and treble will be selected by the buttons, and controlled by the volume knob.

➤ **Volume Knob (area ③):**

Clockwise Rotation: Volume up

Counter-clockwise Rotation: Volume down

Press: Mute and unmute.

About the Volume Bar (area ④):

The volume bar indicates a real-time volume setting with 10 bars in total. The volume bar functions will change based on the current Control selection.

- LINE: Line volume can be 0~60 where one volume bar will light when the volume is turned up by 6.
- BASS: bass volume can be 0~10
- TREBLE: treble volume can be 0~10

4.2 IR Control

Connect the included IR receiver (5V, without carrier) to IR IN port on the rear panel. Users are able to control the amplifier by the included IR remote (see as below):

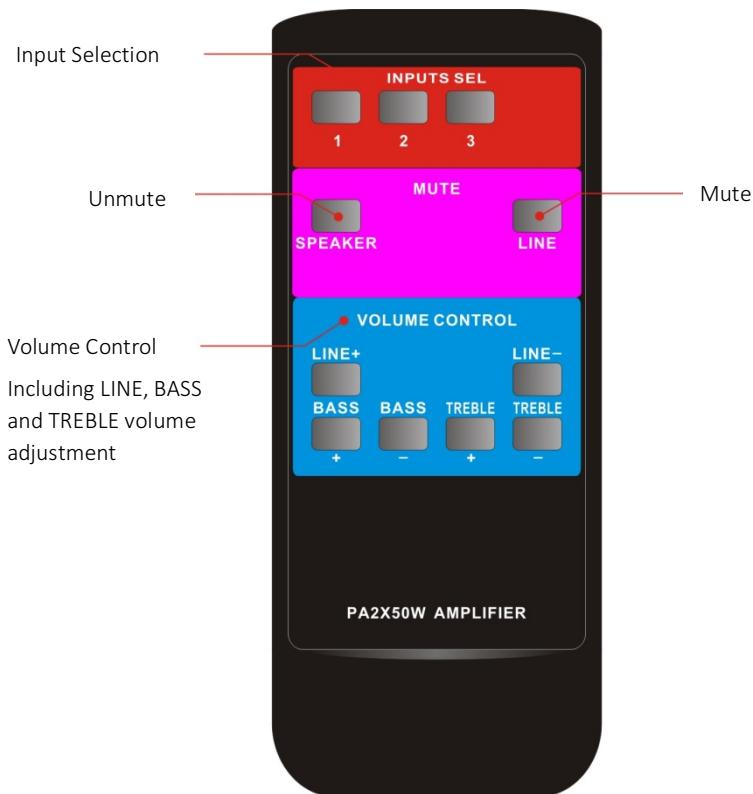
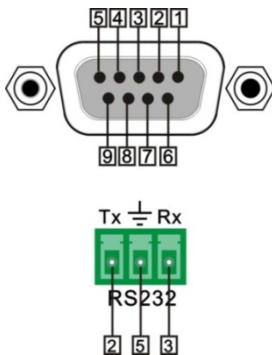


Figure 4- 2 IR Remote

4.3 RS232 Control

TL-A8O-50W uses a 3-pin pluggable terminal block for serial control. The pinout is listed in the table below.



No.	Pin	Function
1	N/u	Unused
2	Tx	Transmit
3	Rx	Receive
4	N/u	Unused
5	Gnd	Ground
6	N/u	Unused
7	N/u	Unused
8	N/u	Unused
9	N/u	Unused

When the amplifier connects to the COM port of a computer with control software, users can control it by that computer.

To control the amplifier, users should use a 3-pole male captive screw to 9-pin HD female connector and use the CommWatch software published on the www.tlnetworkx.com.

4.3.1 Installation/uninstallation of RS232 Control Software

Installation: Copy the control software file to the computer connected with [TL-A8O-50W](#).

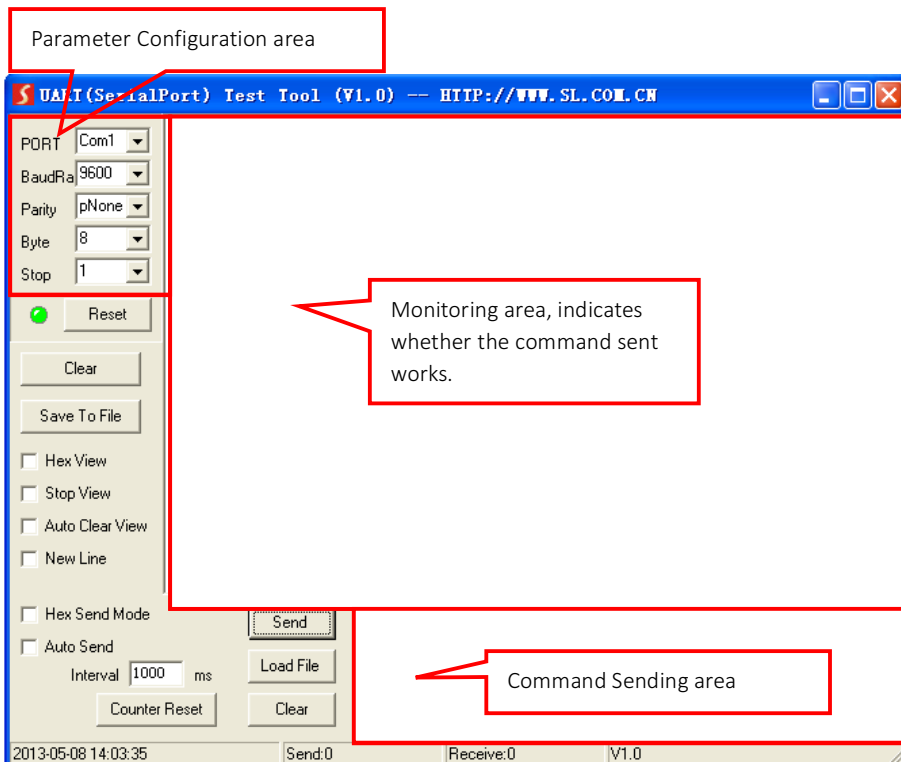
Uninstallation: Delete all the control software files in corresponding file path.

4.3.2 Basic Settings

- Connect the input source devices and the output device according to the system diagram.
- Copy the RS232 control software to the computer, and then connect the RS232 port of the computer to the TL-A8O-50W.
- Double-click the EXE program to execute the software. The icon is shown below:



With the control software, we can easily switch the input channel, mute the output, check the status, and adjust the volume etc. Please refer the details in *RS232 Communication Commands*. The primary functions of the software are highlighted below.



Please set the parameters of COM number, baud rate, data bit, stop bit and the parity bit correctly, only then will you be able to send command in Command Sending Area.

4.3.3 RS232 Communication Commands

Communication protocol: Baud rate: 9600; Data bit: 8; Stop bit: 1; Parity bit: none.

Command	Description	Feedback
1A1.	Switch to input 1	A: 1 -> 1
2A1.	Switch to input 2	A: 2 -> 1
3A1.	Switch to input 3	A: 3 -> 1
0A0.	Mute Audio Line out	Mute Audio
0A1.	Unmute Audio Line out	Unmute Audio
600%	Inquire present working status	A: 1 -> 1 Volume: 30 Bass: 0 Treble: 0
601%	Turn up Line volume by 1	Volume of LINE: 51
602%	Turn down Line volume by 1	Volume of LINE: 51
603%	Turn up Bass volume by 1	Bass of LINE: 4
604%	Turn down Bass volume by 1	Bass of LINE: 4
605%	Turn up Treble volume by 1	Treble of LINE: 4
606%	Turn down Treble volume by 1	Treble of LINE: 4
607%	Restore factory default	Factory Default A: 1 -> 1 Volume: 45 Bass: 5 Treble: 5
610%	Turn up Line volume by 3	Volume of LINE: 54
620%	Turn down Line volume by 3	Volume of LINE: 51
61X%	Turn up Line volume by X	Volume of LINE: 54
62X%	Turn down Line volume by X	Volume of LINE: 54
7[x][x]%	Preset line volume, [xx] can be 00~60, 61 degrees in total.	Volume of LINE: 50
8[x][x]%	Preset the bass level, [xx] can be 00~10, 11 degrees in total.	Bass of LINE: 7
9[x][x]%	Preset the treble level, [xx] can be 00~10, 11 degrees in total.	Treble of LINE: 7
GetIP;	Get the IP of the device	IP: 192.168.0.178

Notice:

1. The letter inside bracket [] is the variable code, which is changeable.
2. The bracket [] is not included to the RS232 commands.

3. Any dot “.” after the letters is part of the commands.

4.4 TCP/IP Control

TL-A8O-50W provides a TCP/IP port for IP control.

Default settings: IP: 192.168.0.178; Subnet Mast: 255.255.255.0; Gateway: 192.168.0.1; Port: 4001.

IP and gateway can be changed, but the port cannot be changed.

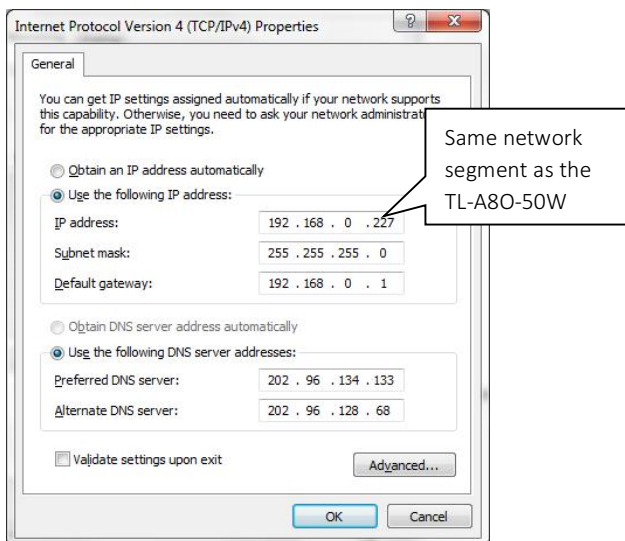
Connect the Ethernet port of control device to the TCP/IP port of TL-A8O-50W, and set same network segment for the two devices. Users are able to control the device via a web-based GUI or TCP/IP communication software.

4.4.1 Control Modes

TL-A8O-50W can be controlled by PC without Ethernet access or PC(s) within a LAN.

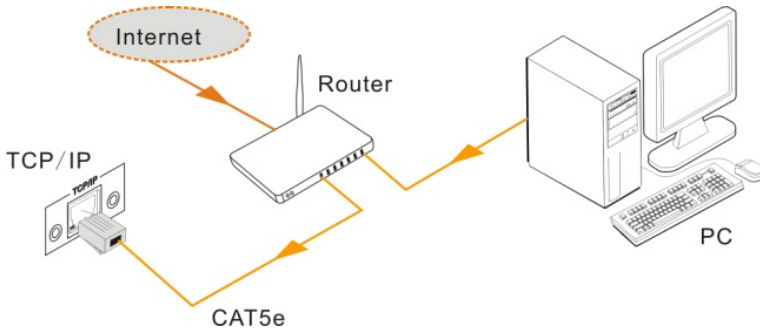
● Controlled by PC without Ethernet access

Connect a computer to the TCP/IP port of the TL-A8O-50W and set its network segment to the same as the TL-A8O-50W.



● Controlled by PC(s) in LAN

Connect TL-A8O-50W, a router and several PCs to setup a LAN (as shown in the following figure). Set the network segment of TL-A8O-50W to the same as the router's, then PCs within the LAN are able to control TL-A8O-50W.

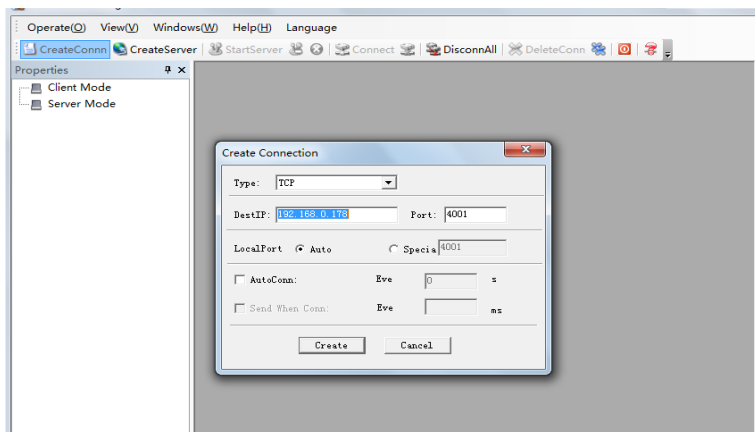


Follow these steps to connect the devices:

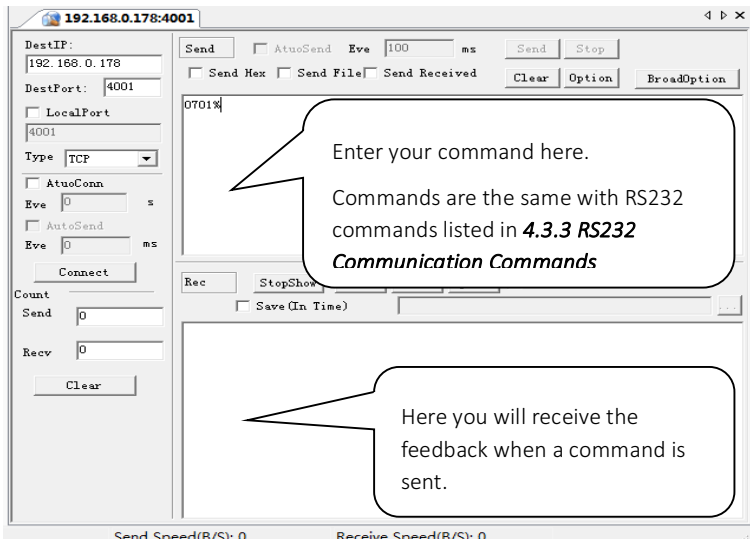
- Step1.** Connect the TCP/IP port of the TL-A80-50W to Ethernet port of PC with straight-thru CAT5e/6.
- Step2.** Set the PC's network segment to the same as the TL-A80-50W's.
- Step3.** Set the TL-A80-50W's network segment to the same as the router.
- Step4.** Set the PC's network segment to the original ones.
- Step5.** Connect the TL-A80-50W and PC(s) to the router. PC(s) within the LAN is able to control the TL-A80-50W asynchronously.

4.4.2 Control via TCP/IP communication software

- 1) Connect a computer and TL-A80-50W to the same network. Open TCP/IP communication software and create a connection. Enter the IP address and port of TL-A80-50W (default IP: 192.168.0.178, port:4001):



- 2) After connected successfully, we can enter commands to control the TL-A80-50W, as below:



192.168.0.178:4001

DestIP: 192.168.0.178
 DestPort: 4001
 LocalPort: 4001
 Type: TCP
 AtuoConn: []
 Eve: 0 s
 AutoSend: []
 Eve: 0 ms
 Connect
 Count
 Send: 0
 Recv: 0
 Clear

Send [] AtuoSend [] Eve 100 ms [Send] [Stop]
 [Send Hex] [Send File] [Send Received] [Clear] [Option] [BroadOption]

0701%

Enter your command here.
 Commands are the same with RS232
 commands listed in **4.3.3 RS232
 Communication Commands**

Here you will receive the
 feedback when a command is
 sent.

Rec [] StopShow []
 [Save (In Time)] []

Send Speed(B/S): 0 Receive Speed(B/S): 0

4.4.3 Control via web-based GUI

TL-A8O-50W provides with built-in GUI for convenient TCP/IP control. GUI allows users to interact with TL-A8O-50W through graphical icons and visual indicators.

Type 192.168.0.178 (default IP, changeable via GUI) in your browser, it will enter the log-in interface shown as below:

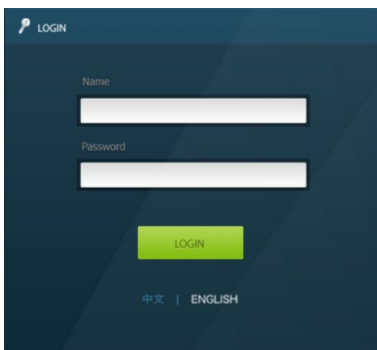


Figure 4- 3 Log-in interface

GUI interfaces can be displayed in Chinese/ English, selectable by clicking 中文/ ENGLISH.

Type the right name and password in relative column:

Name: admin; **Password:** admin (default setting, changeable via GUI)

Click **LOGIN**, it will show the audio selection interface as shown below:

Audio Selection:

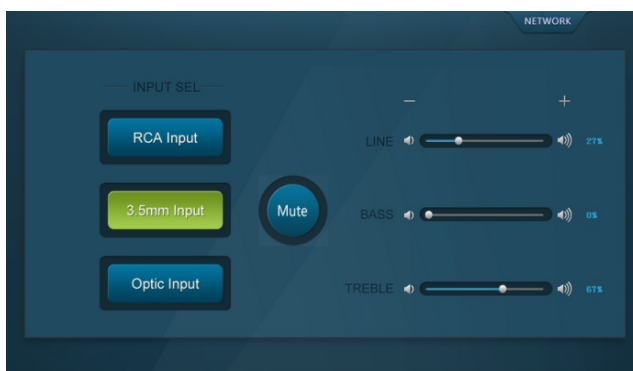


Figure 4- 4 Network Control

In this interface, you can:

- Select input
- Mute/ Unmute
- LINE/ BASS/ TREBLE control: drag the volume dot to turn down/ up the corresponding volume
- Switch to network configuration interface by clicking **NETWORK**

Network Configuration:



Figure 4- 5 Audio Selection

In this interface, you can:

- Configure network settings:
 - IP: support DHCP and Static IP, choose demanded state by clicking the button
 - DHCP: IP Address, subnet mask and gateway are fixed in this mode.
 - Static IP: set IP Address, subnet mask and gateway manually. Make sure the IP is different with control device's.
- Modify password: type in new password in the column, max at 5 numbers/ letters
- Inquire software version
- Switch to audio selection interface by clicking **AUDIO SEL**

If there is any modification in this interface, press **Save** to restore the settings, or press **Cancel** to withdraw. Click **AUDIO SEL** to return to NETWORK interface.

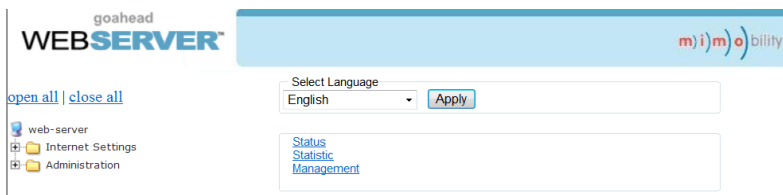


Clear the cache of the browser beforehand to ensure reliable GUI operation.

4.4.4 Port Management

Type the designed website 192.168.0.178:100 (Default, changeable via GUI) in your browser. Enter correct username and password (same with GUI name and password) to log in the WebServer:

Here is the main configuration interface of the WebServer:



In this interface, you can:

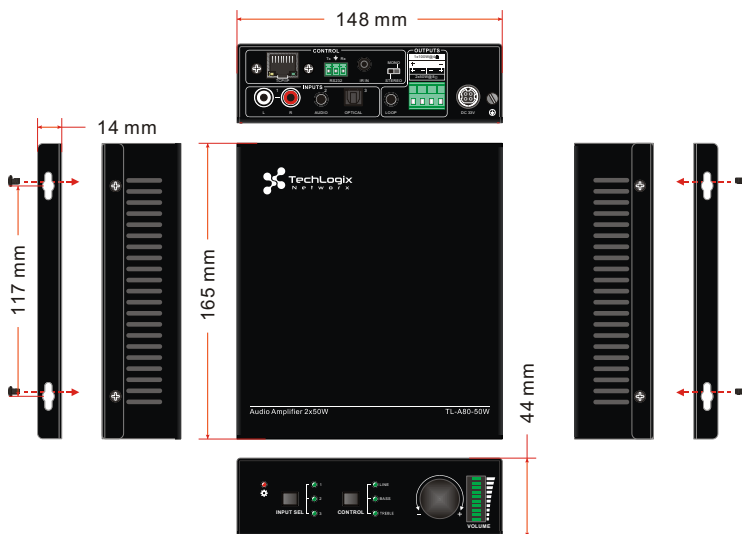
- Change website display language
 - Modify network settings: Go to Internet Settings -> WAN
 - Upgrade TCP/IP module: Go to Administration -> Upload Program -> Select program file -> Start upgrading
- Reboot the device after upgrading.

5. Specification

Input		Output	
Input Signal	1x L+R stereo audio 1x 3.5mm analog audio 1x Optical Fiber audio	Output Signal	1x LOOP 2x Stereo audio/ 1 Mono audio
Connectors	2x RCA 1x 3.5mm TRS plug 1x SPDIF	Connectors	1x 3.5mm jack 1x 4-pin 5.08mm connector
Input impedance	>10KΩ	Damping coefficient	>100
Control			
Control Ports	1x RS232 (3-pin pluggable terminal block) 1x IR IN (3.5mm female) 1x TCP/IP (RJ45 female, optional)		
Panel Control	Front panel buttons& rear panel switcher		
General			
SNR	80dB	THD+ Noise	1%@1KHz 50W
Separation	75dB 20Hz～20KHz	Damping coefficient	100
Voltage Gain	32dB	Output Power	1×100W@4Ω/2×50W@8Ω
Power Supply	DC 33V 4A	Power Consumption	1.48W
Work Temperature	0～50℃	Reference Humility	10%～90%
Dimensions (W*H*D)	148 x44 x165 mm	Weight	0.72kg

NOTE: All nominal levels are at $\pm 10\%$.

6. Panel Drawing



7. Troubleshooting & Maintenance

Problem	Possible Cause	Solution
No output audio	Loose or broken connection at input/ output end	Reconnect the devices.
	No connected source at the chosen input channel	Insert source to the port or change for other input channels.
	Audio has been muted	Press the volume knob to unmute.
	Wrong output connection	Connect output according to different transmission mode (stereo or mono).
Power indicator is off and the device respond nothing to any operation	Not energized yet	Energize the device.
	Loose or broken power connection	Reconnect the power adapter.
Fail in TCP/IP control	Control device and TL-A80-50W are on different network segment	Set the network segment of control device to the same with TL-A80-50W's.
	Network segment of TL-A80-50W is different with LAN's.	Set the network segment of TL-A80-50W to the same with LAN's.
Fail in RS232 control	Loose or broken RS232 connection	Reconnect the devices or change for another RS232 cable.
	Wrong command	Send the exact command listed in 4.3.3.
	Wrong communication protocol	Set the protocol to: Baud rate: 9600; Data bit: 8; Stop bit: 1; Parity bit: none.
Fail in IR control	Run out of battery	Change for new batteries.
	Exceed effective control distance or angle	Adjust control distance and angle.
No loop output	No connected source at input 1 & 2 of the 1 st TL-A80-50W	Connect audio source to input 1 or 2 of the 1 st TL-A80-50W.
	Wrong input selection at the 1 st TL-A80-50W	Select input 1/2 at the 1 st TL-A80-50W

If your problem persists after following the above troubleshooting steps, seek further help from authorized dealer or our technical support.

8. After-sales Service

If there appear some problems when running the device, please check and deal with the problems referenced in this user manual.

- 1) **Product Limited Warranty:** We warrant that our products will be free from defects in materials and workmanship for **three years**. Please see warranty page posted on www.tlnetworx.com for more info.
- 2) **What the warranty does not cover:**
 - Warranty expiration.
 - Factory applied serial number has been altered or removed from the product.
 - Damage, deterioration or malfunction caused by:
 - Normal wear and tear
 - Use of supplies or parts not meeting our specifications
 - No certificate or invoice as the proof of warranty.
 - The product model showed on the warranty card does not match with the model of the product for repairing or had been altered.
 - Damage caused by force majeure.
 - Non-authorized service
 - Other causes which does not relate to a product defect
 - Delivery, installation or labor charges for installation or setup of the product
- 3) **Technical Support:** Email to our after-sales department or make a call, please inform us the following information about your cases.
 - Product version and name.
 - Detailed failure situations.
 - The formation of the cases.

Remarks: For any questions or problems, please try to get help from your local distributor.