



Public Address System

Public Address Pre Amplifier

MODEL:

EF-81

EF-82

EF-81S

EF-82S

Warning: Before attempting to connect, operate or adjust this Amplifier, please read these instructions completely and carefully and save this Manual

IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions - All the safety and operating instructions should be read before this product is operated.
2. Keep these instructions - The safety and operating instructions should be retained for future reference.
3. Heed all warnings - All warnings on the appliance and in the operating instructions should be adhered to.
4. Follow all instructions - All operating and use instructions should be followed.
5. Do not use this apparatus near water - The appliance should not be used near water or moisture - for example, in a wet basement or near a swimming pool, and the like.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding plug. A polarized plug has two blades with one wider than the other. A grounding plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and at the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/appliances combination to avoid injury from tip-over.
13. Unplug the apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when



- the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. Please keep the unit in a good ventilation environment.
 16. **WARNING:** To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture. The apparatus shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, shall not be placed on apparatus.
 17. **WARNING:** The mains plug or appliance inlet is used as disconnect device, the disconnect device shall remain readily operable.
 18. **Power Sources** – This product should be operated only from the type of power source indicated on the rating label. If you are not sure of the type of power supply to your home, consult your product dealer or local power company. For products intended to operate from battery power, or other sources, refer the operating instructions.
 19. **Safety Check** – Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.
 20. Don't touch conductive parts of output terminals to prevent hazardous electrical shock. The external wiring connected to the terminals requires installation by an instructed person or the use of ready-made leads or cords.
 21. This equipment is for commercial & professional use only.
 22. This product is in compliance with EU WEEE regulations. Disposal of end of life product should not be treated as municipal waste. Please refer to your local regulations for instructions on proper disposal of this product.
 23. To prevent hazardous electrical shock, do not touch the conductive parts of the output terminals. The external wiring connected to the terminals requires installation by an qualified technician or the use of ready made leads or cords.
 24. Please locate the apparatus at places nearby power socket for quick power disconnection in emergency.



Protective earthing terminal. The apparatus should be connected to a mains socket outlet with a protective earthing connection.



This lightning flash is intended to alert the user to the presence of non-insulated "dangerous voltage" on the output terminals that may be of sufficient magnitude to constitute a risk of electric shock. The external wiring connected to the terminals requires installation by an instructed person or the use of ready-made leads or cords.



CAUTION

**RISK OF ELECTRIC SHOCK
DO NOT OPEN**



CAUTION: To reduce the risk of electric shock, do not remove any cover. No user-serviceable parts inside. Refer servicing to qualified service personnel only.



The lightning flash with arrowhead symbol within the equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock.



The exclamation point within the equilateral triangle is intended to alert the user to the presence of important operation and maintenance (servicing) instructions in the literature accompanying this appliance.

CAUTION: To prevent electric shock, do not use this polarized plug with an extension cord, receptacle or other outlet unless the blades can be fully inserted to prevent blade exposure.

Table of Contents

Introductions -----	2
Features -----	3
Front panel controls -----	4
Rear panel controls -----	6
Specifications -----	8

Introductions

The EF-8XX series are simple but versatile preamplifiers, offering a multifunctional solution for installations where multiple voice and music sources need to be mixed to one or two (only EF-82&82S) output zones. The stereo design with eight inputs allows connecting any, type of audio source such as microphones.

Channels one and two are balanced inputs, allowing connection of microphone and line level audio sources. They feature 3-band tone control, phantom power and talk over for priority announcements. EF-81S and EF-82S have six balanced stereo inputs (EF-81& EF-82 is a balanced mono input), allowed to connect the audio line level. A partition balanced stereo output is EF-81S (EF-81 is a balanced mono output), two partitions balanced stereo output is EF-82S (EF-82 is a balanced mono output).

A master volume control for the output(s) including 2-band tone control and LED VU meter is located on the front panel, also accommodating each inputs mixing dial. On the back of the preamplifier is a priority mute contact that suppresses all (non-priority) music sources in case of contact closure, allowing linking autonomous alarm systems.

Unpacking and Installation

Although it is neither complicated to install nor difficult to operate unit, a few minutes of your time is required to read this manual for a properly wired installation and becoming familiar with its many features and how to use them. Please take a great care in unpacking your set and do not discard the carton and other packing materials. They may be needed when moving your set and are required if it ever becomes necessary to return your set for service. Never place the unit near radiators, in front of heating vents, excessive humid or dusty location to avoid early damage and for your years of quality use.

Connect your unit with the system components according to the description on the following pages.

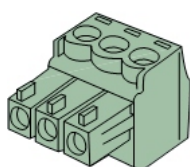
Features

• CONNECTION STANDARDS

The input and output connections for audio equipment are performed corresponding to international wiring standards for professional audio equipment.

• 3-Pin Terminal Block: EF-81/EF-82

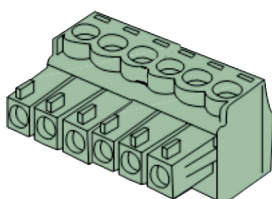
For balanced signal input & link output connections.



Left: Ground
Center: Signal-
Right: Signal+

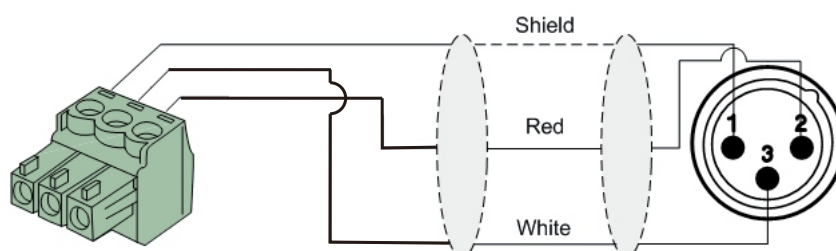
• 6-Pin Terminal Block: EF-81S/EF-82S

For balanced stereo input & link output connections.

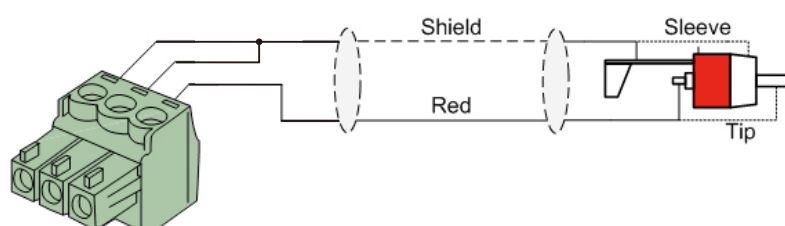


L { Left: Ground
Center: Signal-
Right: Signal+
R { Left: Ground
Center: Signal-
Right: Signal+

For balanced line output connections:

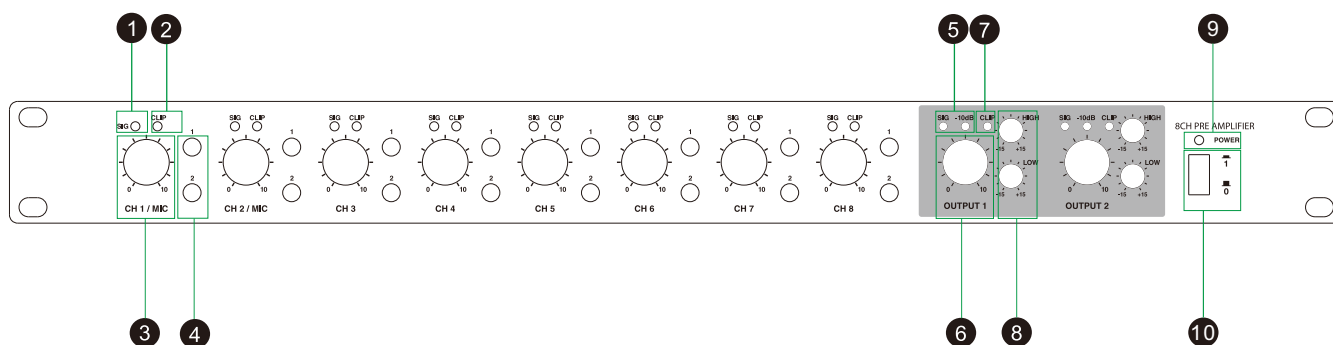


For unbalanced line output connections:



Front Panel Controls

FRONT PANEL



1. SIGNAL INDICATORS

These indicators show current input signal on the each input channels.

2. PEAK INDICATORS

These indicators warn against overload shortly on the each input channels. We would like to recommend for users to adjust TRIM control on the rear panel when PEAK indicators are flickering to make best performance.

3. INPUT CHANNEL VOLUME

These allow to adjust for each input level.

4. OUTPUT CHANNEL SELECTORS

These selectors allow to route each input signal through out to selected output channels.

5. OUTPUT LEVEL METER

These indicators show current output level.

6. OUTPUT VOLUME

These faders allow to adjust the level for each output channels.

7. CLIP INDICATORS

These indicators warn against overload shortly on the each output channels. We would like to recommend for users to adjust VOLUME control when CLIP indicators are flickering to make best performance.

8. OUTPUT CHANNEL EQ CONTROLS

Output channels have two band equalizer which is adjustable over a wide range as follow.
HIGH : $\pm 15\text{dB}$ at 10KHz / LOW : $\pm 15\text{dB}$ at 100Hz

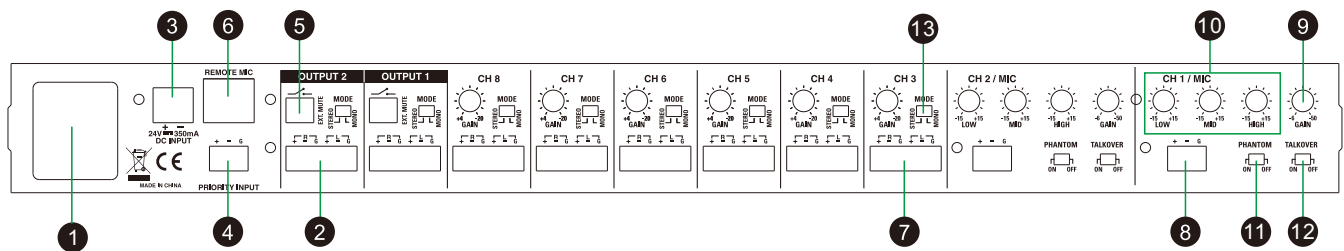
9. POWER INDICATOR

This indicator lights when power switch is turned on.

10. POWER SWITCH

This button is power on/off switch.

Rear Panel Controls



1. AC POWER INLET WITH FUSE:

The mains power supply (100-240V AC - 50/60 Hz) has to be applied to this AC power inlet. The connection is made by an IEC C14 power connector and is fitted with a fuse. When replacing the fuse, make sure that the value of the replacement fuse matches the value of the original fuse. (T500mA/250V)

2. BALANCED STEREO LINE OUTPUT:(EF-81S&EF-82S)

The balanced stereo line output(s) is implemented using one 6-pin terminal block output connectors. The audio signal available on these connectors allows it to be fed to any amplifier.

3. DC 24V INPUT:

If connected to DC 24V. These terminals are provided for the connection of 24V DC power source. 24V DC battery source can be connected to these terminal.

4. PRIORITY INPUT:

ALL other input signals are muted by the input signals of PRIORITY INPUT .

5. PRIORITY MUTE CONTACT:

A priority mute contact is provided with each output, allowing to completely mute the music at presence of a contact closure between both terminals. This contact is convenient for situations where a separate emergency system is installed and complete background music muting is required at occasion of a (fire) alarm. The emergency system contact outputs can be connected to this contact input.

6. REMOTE MIC INPUT

This RJ45 Jack allow to connect EM-4(desktop remote microphone)for individual zone annaouncement.

7. BALANCED STEREO LINE INPUT(EF-81S&EF-82S):

Balanced line level audio sources can be connected to channel 3-8 which is implemented using 6-Pin Terminal Block connectors.

8. BALANCED MICROPHONE INPUTS:

Balanced mono sources (e.g. microphones) can be connected to inputs mic 1 and mic 2 which are implemented using 3-Pin Terminal Block connectors.

9. GAIN CONTROLS:

These controls allow to accept variable input level. They have 44dB adjustable range as -50dB to -6dB for microphone input channels and -30dB to +14dB for line input channels.

10. INPUT CHANNEL EQ CONTROLS:

These controls allow to equaliza the input signal from -15dB to +15dB at 80Hz(LOW),2.5kHz(MID) and 12kHz(HIGH) for CH1~CH2.

11. PHANTOM POWER SWITCH:

The phantom power can be provided to each microphone input for using condenser microphone.

12. TALKOVER SWITCH:

All other input signals are muted by the input signal of channel 1 auto-matically when this switch pressed on.

13. MODE:

A mode switch allows to switch the input between mono and stereo mode and mixes both channels when switched to mono, making them identically available on both output channels.

Specifications

Model Name		EF-81	EF-81S	EF-82	EF-82S
Rated Output Level / Impedance		0dB / 600 Ω Balanced			
Input sensitivity /Impedance	Mic Input	-50 dB~ - 6 dB / 20K Ω Balanced			
	Line Input	-20 dB~ +4 dB / 20K Ω Balanced			
	Remote Input	0dB / 600 Ω balanced			
Output level / Impedance		0dB / 600 Ω balanced			
Frequency Response (-1dB)		20Hz - 20kHz			
T.H.D		< 0.01%			
Closstalk		>70 dB			
Equalization	Input	High : 12 kHz \pm 15 dB / Mid : 2.5 kHz \pm 15 dB / Low : 80 Hz \pm 15 dB			
	Output	High : 10 kHz \pm 15 dB / Low : 100 Hz \pm 15 dB			
Hum & Noise		>90 dB			
Power Source		AC 100~240 V, 50/60Hz , DC 24 V			
Weight (Net)		3.4 kg	3.5 kg	3.5 kg	3.7 kg
Dimensions (W x H x D)		482 x 44 x 320mm			

*Specifications and design subject to change without notice for improvements.