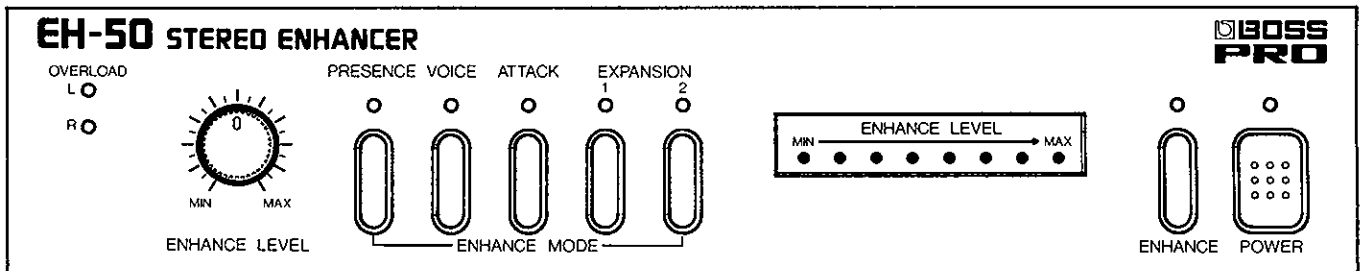


# BOSS

# EH-50 STEREO ENHANCER

Owner's Manual



Thank you, and congratulations on your choice of the BOSS EH-50 Stereo Enhancer.

To make sure you enjoy the complete range of functions the EH-50 provides, and to ensure satisfaction for years to come, please take the time to read this Owner's Manual completely before starting out.

## ■ Features

- The EH-50 is a 2-in/2-out stereo enhancer. Monophonic instruments can also benefit from use of the EH-50.
- Ease of operation. Just select a Mode and adjust the Enhance level to get the right amount of enhancement.
- The Enhance Level Indicator shows you at a glance how much enhancement effect is being applied. This makes adjusting the levels easy.
- In certain Modes the amount of enhancement is directly dependent on the level of the input signal. In these modes, attack sounds are emphasized.
- The Enhance Switch allows you to select the Enhancer In or Out mode. The mode can also be changed using a pedal switch.
- The Overload Indicator is provided for setting appropriate signal levels (without distortion).
- Using the Rack Mount Adaptor RAD-50 (optional), the EH-50 can be mounted in a standard 19 inch rack (EIA).

## ■ Enhancer

An "enhancer" processes the upper harmonic content of a sound and adds this back in to the fundamental tone. Mixing this processed sound (the "enhance" signal) with the fundamental clear up the contours of a sound without altering the fundamental itself to improve. It gives vocals a more powerful and yet transparent feeling, and is great for adding excitement and punch to drum or bass tracks. It's also useful for cleaning up generation noise from bounced tracks in tape dubbing and multitrack recording. Although an enhancer is used for all these different jobs, it's all called enhancing.

The EH-50 has five different Enhance modes. Just select a mode and adjust the signal mix level (Enhance Level) to apply the Enhance effect in a variety of situations. And in certain modes the amount of Enhance signal depends on the input signal strength, which lets you apply it where it's needed most to add sparkle and excitement to your music.

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## ■ IMPORTANT NOTES

When using an AC adaptor, be sure that it is one supplied by the manufacturer. Use of any other power adaptor could result in damage, malfunction, or electric shock.

### Power Supply

- When making any connections with other devices, always turn off the power to all equipment first; this will help prevent damage or malfunction.
- Do not use this unit on the same power circuit with any device that will generate line noise, such as a motor or variable lighting system.
- The power supply required for this unit is shown on its nameplate. Ensure that the line voltage of your installation meets this requirement.
- Avoid damaging the power cord; do not step on it, place heavy objects on it etc.
- When disconnecting the AC adaptor from the outlet, grasp the plug itself; never pull on the cord.
- If the unit is to remain unused for a long period of time, unplug the power cord.

### Placement

- Do not subject the unit to temperature extremes (eg, direct sunlight in an enclosed vehicle). Avoid using or storing the unit in dusty or humid areas or areas that are subject to high vibration levels.
- Using the unit near power amplifiers (or other equipment containing large transformers) may induce hum.
- This unit may interfere with radio and television reception. Do not set this unit in the vicinity of such receivers.

### Maintenance

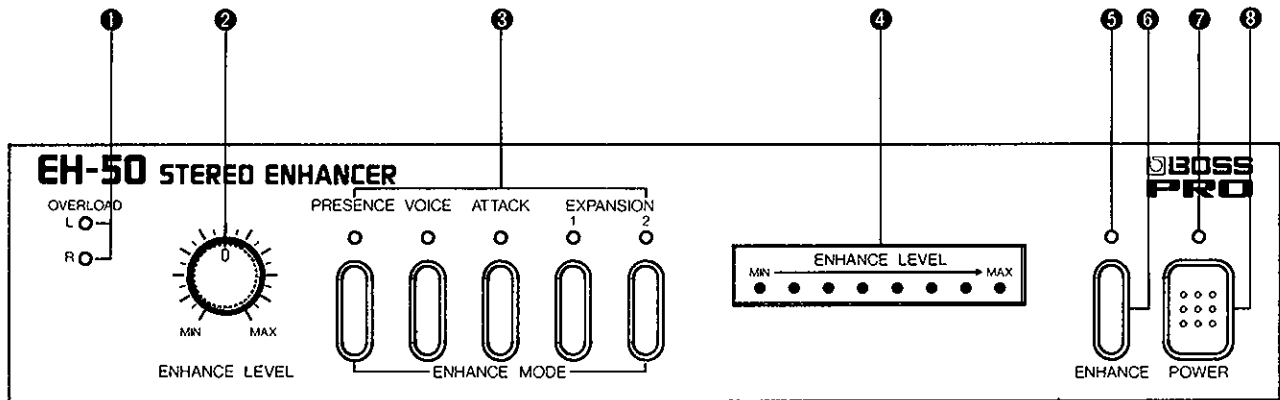
- For everyday cleaning wipe the unit with a soft, dry cloth (or one that has been slightly dampened with water). To remove stubborn dirt, use a mild neutral detergent. Afterwards, be sure to wipe the unit thoroughly with a soft, dry cloth.
- Never use benzine, thinners, alcohol or solvents of any kind, to avoid the risk of discoloration and/or deformation.

### Additional Precautions

- Protect the unit from strong impact.
- Do not allow objects or liquids of any kind to penetrate the unit. In the event of such an occurrence, discontinue use immediately. Contact qualified service personnel as soon as possible.
- Should a malfunction occur (or if you suspect there is a problem) discontinue use immediately. Contact qualified service personnel as soon as possible.
- To prevent the risk of electric shock, do not open the unit or its AC adaptor.

# ■ PANEL DESCRIPTIONS

## < Front Panel >



### ❶ Overload Indicator L/R

These light whenever the input, output or Enhance signals are excessive.

\* **The indicators actually light when the signal level is 6dB below the clipping point (where the signal is distorted). If they light only occasionally it's OK, but if the lights flash every second or so, or stay on constantly, you need to turn down the signal.**

- Lower the output level of the device connected to the input Jack.
- Lower the Enhance level with the Enhance Level Knob.
- Change the Level Switch to the "+4dBm" position.

### ❷ Enhance Level Knob

This knob adjusts the Enhance signal mix level. The Enhance level will be the same for both channels (L and R).

\* **Rotate the Enhance Level Knob to the right to the point where Overload Indicator ❶ lights, then back it down again to where it only lights during the occasional peaks in the input sound itself.**

### ❸ Enhance Mode Buttons/ Enhance Mode Indicators

You can select from five different Enhance Modes. An indicator will light to show which Mode is selected.

\* **You can only press and have one button active at any one time.**

The five Modes are as follows:

**PRESENCE:** This Mode enhances the highs. Use this mode to clean up a part and help it cut through the mix.

**VOICE:** Great for voices. Helps a vocal cut through the back-up.

**ATTACK:** Helps "punch-up" the highs on a track by matching the Enhance level to changes in the input signal, thus making the attacks even more exciting.

**EXPANSION 1:** Enhances the highs and lows. The Enhance level is matched to changes in the input signal, and the low frequencies are emphasized to improve articulation and give the sound more "bite".

**EXPANSION 2:** Enhances all frequencies. The Enhance level is matched to changes in the input signal, and helps bring out sounds covering the entire spectrum of frequencies. You can use this mode without selecting an input source.

### ❹ Enhance Level Indicator

Displays the Enhance signal Mixing level. This is displayed even if Enhance Out is selected, when the input signal passes directly to output (bypass).

### ❺ Enhance Indicator

Lights when Enhance In is selected.

### ❻ Enhance Switch

Switches between Enhance In/Out. When this switch is set to In, the dry input signal is mixed with the Enhanced signal before output. When it is set to Out, the input signal bypasses the Enhance effect mixing stage and goes directly to output.

### ❼ Power Indicator

The indicator lights when the Power Switch is turned on.

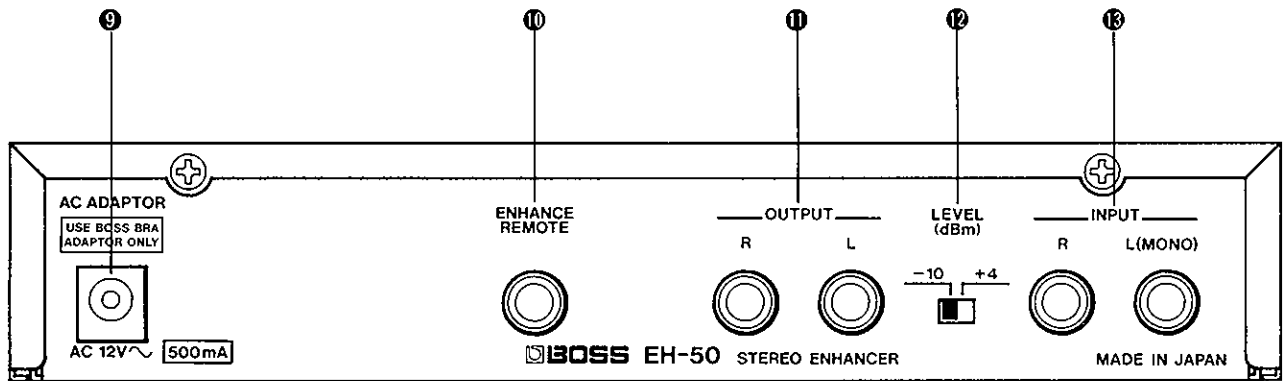
### ❽ Power Switch

This switches the unit on and off.

\* **Before switching the unit on or off, be sure to set the volume of the amplifier to zero.**

\* **Muting circuits function for a few seconds after the unit is switched on. No sound will be heard during this time.**

## < Rear Panel >



### ⑨ AC Adaptor Jack

Connect the supplied AC adaptor (BOSS BRA-120, 220 or 240) to this jack.

### ⑩ Enhance Remote Jack

By connecting a footswitch (FS-5L:optional) to this jack, you can select the Enhance In / Out mode with the footswitch. The Enhance Indicator shows which mode is currently selected.

\* **When using a footswitch, be sure to set the Enhance Switch on the unit to the IN position.**

### ⑪ Output Jack

Signals are output from this jack.

\* **If you use a mono setup, the same signal is output from Output Jacks L/R.**

### ⑫ Level Switch

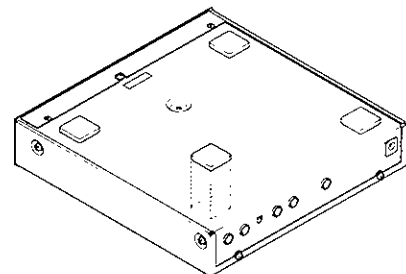
This is a selector switch for the rated input or output level. Set it to either the "-10dBm" or "+4dBm" position depending on the instrument you are using. Normally, when you use a guitar or electronic musical instrument, set it to the "-10dBm" position.

\* **The volume of sound is not altered by changing the position of the Level Switch.**

### ⑬ Input Jack L(MONO)/R

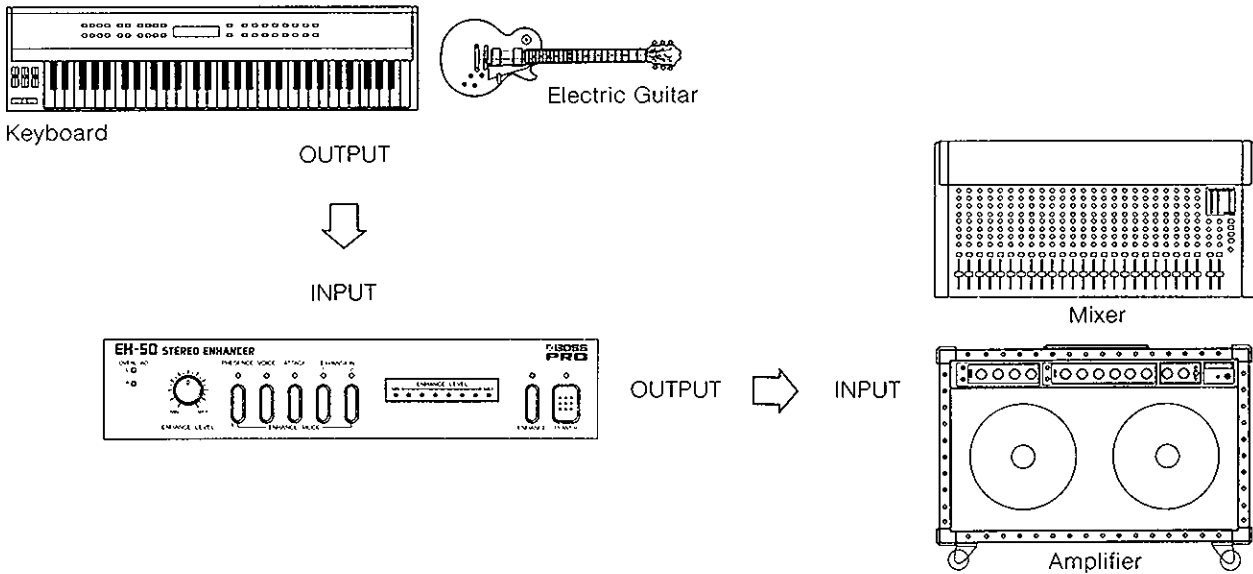
Connect the instrument/device to these jacks. For a mono setup, make connections using only the L(MONO) jack.

When using the unit without the optional Rack Mount Adaptor RAD-50, please attach the rubber feet as shown below.

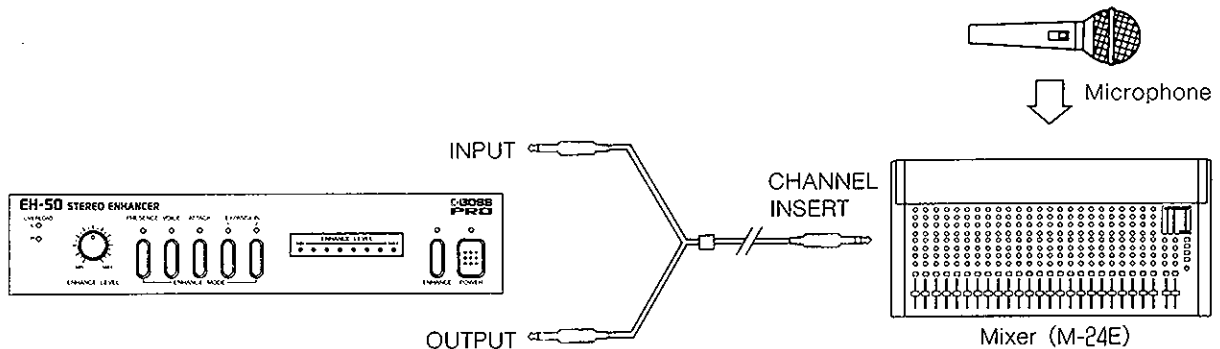


# MAKING CONNECTIONS

**Connection Example 1: For connecting a keyboard, electric guitar, or ther instrument.**

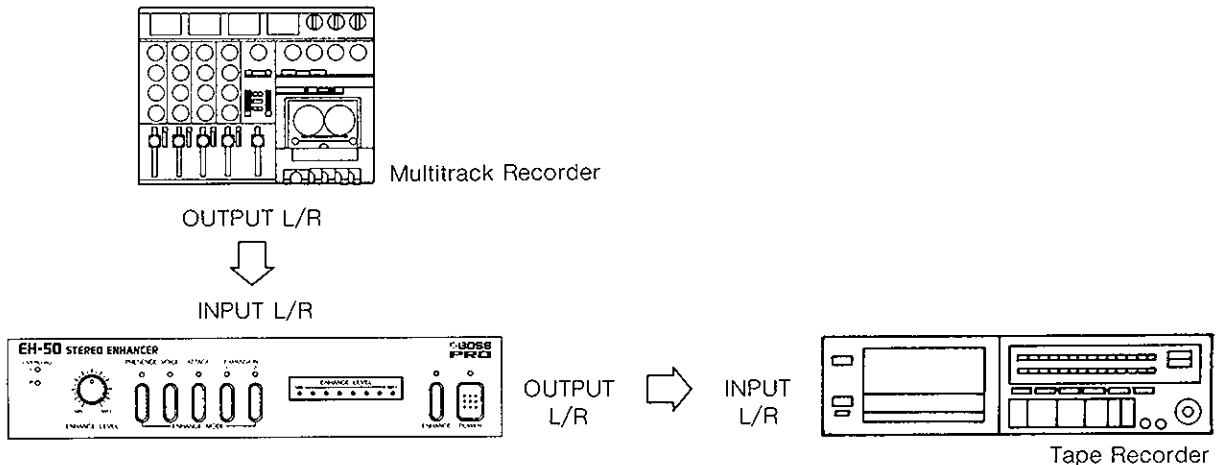


**Connection Example 2: To connect to Channel Insert on a mixer.**

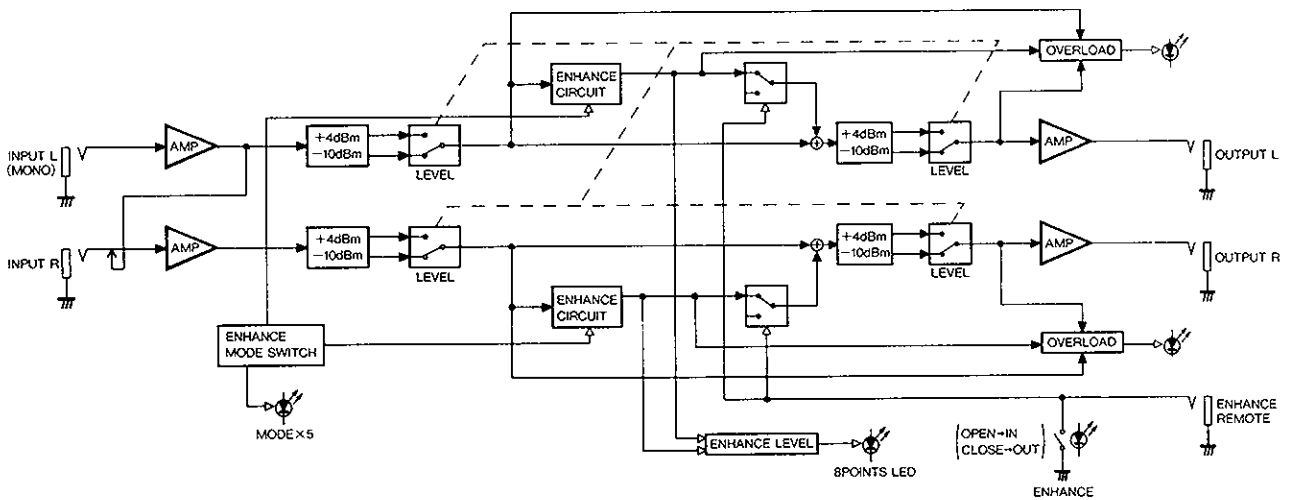


\* For making the connection an "insert" cable is needed (PCS-31).

**Connection Example 3: Using track down**



# ■ BLOCK DIAGRAM



# ■ SPECIFICATIONS

**Frequency Response:**

10Hz to 30kHz +1/−3dB (Level Switch: −10dBm)

**Nominal Input Level:**

−10dBm/+4dBm (selectable with Level Switch)

**Input Impedance:**

1MΩ

**Nominal Output Level:**

−10dBm/+4dBm (same as Nominal Input Level)

**Output Impedance:**

600Ω

**Recommended Load Impedance:**

10kΩ or greater

**Residual Noise Level:**

−100dBm or less

(IHF-A, Enhance Level: Center, Level Switch: −10dBm)

**Controls:**

- Enhance Level Knob
- Enhance Mode Switch × 5
- Enhance Switch
- Power Switch
- Level Switch

**Indicators:**

- Overload Indicator L/R
- Enhance Level Indicator (8points)
- Enhance Mode Indicator ×5
- Enhance Indicator
- Power Indicator

**Connectors:**

- Input Jack L(MONO)/R (1/4 inch phone type)
- Output Jack L/R (1/4 inch phone type)
- Enhance Remote Jack
- AC Adaptor Jack (AC 12V)

**Power Supply:**

AC12V: AC Adaptor BRA-120, 220, 240

**Current Draw:**

500mA

**Dimensions:**

218(W) × 235(D) × 44(H) mm  
 8-5/8" (W) × 9-1/4" (D) × 1-3/4" (H) inches

**Weight:**

1.4 kg / 3 lbs 2 oz

**Accessories:**

- AC Adaptor BRA-120, 220, 240
- Foot Rubber ×4
- Owner's Manual

**Options:**

- Rack mount Adaptor RAD-50
- Foot Switch FS-5L

\* 0dBm = 0.775Vrms

\* In the interest of product improvement, the specifications of this unit are subject to change without prior notice.



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