Cat. No. 32-3001

OWNER'S MANUAL

Please read before using this equipment.

SM-1000

Audio Mixer with Echo (Rack Mount Type)

Radio Shack

FEATURES

Your Radio Shack SSM-1000 Audio Mixer with Echo is a sophisticated control center for recording from multiple playback sources such as a CD player, tuner, turntable, or VCR, or from live performances. A seven band equalizer and an echo effect are incorporated into the mixer so you can tailor the sound to compensate for environmental conditions or for personal preference. The mixer's many features give you almost limitless sound combinations.

Its features include:

7-Band Frequency Equalizer — allows you to tailor the sound output to your preference.

Two Pairs of Stereo PHONO Inputs — for using turntables with either magnetic or ceramic cartridges.

Stereo Line Inputs — let you connect most high level audio sources, such as a tape deck, amplifier, tuner, or VCR.

Low-Noise Tape Out Jack — for high-quality tape recording.

Slide Controls — for fingertip control of sound mixing and fading adjustments.

Monitor Controls — let you hear and check line inputs using headphones before mixing.

Normal/Standby/Talkover Switch — lets you control when you talk with music, talk over music, or talk without interrupting the music or being heard through the mixer, to give you a "DJ's" control.

Phono 1/Phono 2 Fader Control — allows you to quickly and smoothly switch between playing PHONO 1 and PHONO 2.

Monitoring Controls — lets you listen to the outputs of MIC, PHONO 1, PHONO 2, LINE 1, LINE 2, or MASTER through headphones.

To obtain best performance of your audio SSM-2200 Mixer, please read this manual carefully before you connect it to other audio components.

For your important records, we recommend you record this unit's serial number in the space provided. You'll find the serial number on the bottom of the unit.

Serial Number: _____

CONTENTS

Warning: To prevent fire or shock hazard, do not expose this mixer to rain or moisture.

CAUTION

RISK OF ELECTRIC SHOCK.
DO NOT OPEN.

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER OR BACK. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED PERSONNEL.

This symbol is intended to alert you to the presence of uninsulated dangerous voltage within the mixer’s enclosure that might be of sufficient magnitude to constitute a risk of electric shock. Do not open the mixer’s case.

This symbol is intended to inform you that important operating and maintenance instructions are included in the literature accompanying this mixer.

PREPARATION

CONNECTING THE OUTPUTS

Connect your amplifier and a cassette recorder to the audio output jacks on the back of the mixer.

(illus - show the left and right output jacks.)

1. Connect the amplifier's left and right input jacks to the mixer's **MAIN OUT** output jacks to play the mixer's sound.
2. Connect the tape recorder's left and right input jacks to the mixer's **TAPE OUT** output jacks to record the mixer's sound.

CONNECTING INPUTS AND PRESETTING LEVELS

Connect your audio sources (AM/FM tuners, CD players, cassette decks, or phonograph players) to the audio input jacks on the back of the mixer.

(illus - show the left and right input jacks.)

1. Connect the AC power cord to a standard AC outlet.
2. Before turning on the power:
   - Set **MIC**, **PHONO 1**, **PHONO 2**, **LINE 1**, and **LINE 2** to **0**.
   - Set **NORMAL/STANDBY/TALK-OVER** to **STANDBY**.
   - Set **MONITOR LEVEL** fully counterclockwise to minimum.
   - Set **EQUALIZER BYPASS/ON** to **BYPASS**.

(illus)

3. Set **POWER OFF/ON** to **ON** to turn on the mixer's power. The VU meters and the power indicator lights.
4. Connect a high-quality microphone with a 1/4-inch plug to the **MIC** terminal.

   Note: This is the remote (guest) microphone.

5. Set **MIC** main volume control to **5**.

Note: You can set the control to any other position (except **0**). However, to get an accurate preset, all the volume controls must set to the exact same position.

(illus)

5. While you use the microphone, insert a flat bladed screwdriver into the slot above the corresponding volume control and adjust it until you obtain a reading of **0** on the **OUTPUT LEVEL** VU meters.

(illus)

6. Temporarily set the **MIC** main volume control to **0**.
7. Repeat Steps 4 through 7 to connect and adjust the preset levels of all your other audio input sources.

Notes:

- Do not connect the high-level outputs of an audio source to the low-level **PHONO CERAMIC 2** (ceramic) jacks.
- Except for the **PHONO** ceramic inputs, you can connect any high-level audio source (tuner, cassette tape deck, CD player, magnetic-cartridge turntable, or VCR) to any set of input jacks.
- Connect the ground wires (usually black or green) from your magnetic cartridge turntable to the **GND** screw terminal on the back of the mixer.

PRE-ADJUSTING THE MONITOR LEVELS

To listen in privacy or monitor the audio source inputs so you can locate an exact passage or section before mixing it into the **MAIN OUTPUT**, insert a pair of stereo headphones (not supplied) equipped with a 1/4-inch plug into the **PHONES** jack on the lower left front corner of the mixer. Your local Radio Shack store sells a wide selection of headphones.

(illus)

1. Set the volume control of the input sources to be monitored to their minimum settings.

2. Set **MONITOR** to **MIC** to select the remote microphone.

(illus)

Note: The DJ's microphone input cannot be monitored.

3. Set **MONITOR LEVEL** to approximately halfway between minimum and maximum.

(illus)

4. Adjust the volume control of the input source you selected until you hear the signal in the headphones at the desired level.

   Caution: Be careful not to accidentally slide up the main volume control of the monitored source before you are ready to put it "on the air."

5. Repeat Steps 1 through 4 to select and preadjust the monitor volume level of the rest of the audio input sources (**PHONO 1**, **PHONO 2**, **LINE 1**, or **LINE 2**) you want to monitor.

To monitor an audio input source, simply select the desired **MONITOR** switch and use **MONITOR LEVEL** to adjust the volume as desired.

Listening Safely

Do not listen at extremely high volume levels. Extended, high-volume listening can lead to permanent hearing loss.

Follow these guidelines to protect your hearing, especially when you use headphones.

- Always start by setting the volume to the lowest level possible before you begin listening. Put the earphone or headsets on, then gradually increase the volume as necessary.
- Once you set the volume, do not increase it. Over a period of time, your ears adapt to the volume level, so a volume level that does not cause discomfort might still damage your hearing.

Caution: As you begin to mix, be careful not to get into the habit of always increasing volume levels to achieve the proper balance. You can bring high levels down just as easily as bring low levels up. Try to keep the independent level controls in the middle position (**3** to **8**), and adjust the overall volume with the **MASTER** volume control as well as the volume control of your input audio equipment. Listening at excessive volume levels will soon give you ''tired ears'' and you won't be as pleased with your finished product later.

OPERATION

BASIC OPERATION

You can mix up to 6 inputs at the same time and use the built-in equalizer and echo generator to tailor the sound as desired.

1. Set **MASTER** to approximately **5**.
2. Set the switch above each volume control to select the input you want to activate. (For example, set **MIC HI/LOW** to **HI** when you use a high impedance microphone, or **LOW** when you use a low impedance microphone.

(illus)

3. Adjust the corresponding volume level control to obtain a reading of **0** on the **OUTPUT LEVEL** VU meters.

   Note: The **OUTPUT LEVEL** VU meter indicates the output signal levels of the left and right channels.

4. Adjust **MONITOR LEVEL** clockwise to increase the main (DJ) microphone's volume; rotate it counterclockwise to decrease the volume.
5. Set **ECHO BYPASS/ON** to **ON** to produce an ECHO effect and to **BYPASS** to eliminate the ECHO effect. (See "Using Echo.")
6. Push in **EQUALIZER BYPASS/ON** to **ON** to operate the right and left 7-channel frequency equalizer controls. (See "Using the 7-Band Frequency Equalizer.")
7. When two turntables (or other audio components connected to the **PHONO 1** and **PHONO 2** inputs) are playing at the same time, slide **FADER** (**PHONO 1/PHONO 2**):
   - Left, to fade in the volume of **PHONO 1** and fade out the volume of **PHONO 2**.
   - Right, to fade in the volume of **PHONO 2** and fade out the volume of **PHONO 1**.

   Note: This lets you quickly and smoothly change from playing **PHONO 1** to playing **PHONO 2** (or vice versa).
8. Set the **MASTER** volume to the desired volume.
9. Set **POWER OFF/ON** to **OFF** to turn off the mixer's power. The VU meters lights go off.

USING THE "DJ'S" MICROPHONE

Normal

For equal blending of voice and music, set **NORMAL/STANDBY/TALKOVER** to **NORMAL**. In the **NORMAL** mode, the "DJ" **MIC** input is mixed to blend equally with all the main volume inputs (**MIC**, **PHONO 1**, **PHONO 2**, **LINE 1**, and **LINE 2**). You can adjust **LEVEL** to increase or decrease the microphone level without affecting the main volume inputs.

Talkover

Start with a microphone level that gives a VU reading of **5** to **3**.

To talk over music, set **NORMAL/STANDBY/TALKOVER** to **TALKOVER**.

The mixer automatically reduces all the main volume inputs (**MIC**, **PHONO 1**, **PHONO 2**, **LINE 1**, and **LINE 2**) just enough for you to hear yourself in the headphones or speakers (over the music).

When you finish speaking, set **NORMAL/STANDBY/TALKOVER** to **STANDBY**. The mixer automatically returns all the main volume inputs to their original levels.

Standby

To disable the **MIC INPUT** microphone, set **NORMAL/STANDBY/TALKOVER** to **STANDBY**.

Note: Set **MIC LEVEL** to minimum (full counterclockwise) when the microphone is not in use.

USING ECHO

The echo mode is applied to the sound after all the inputs are mixed.

Set **ECHO BYPASS/ON** to **ON** to turn on the echo mode and activate the **DELAY** and **REPEAT** functions. Set **ECHO BYPASS/ON** to **BYPASS** to turn off the echo mode.

The **DELAY** control lets you induce a measured time delay to simulate an echo. Set **DELAY** to full counterclockwise for a minimum (**0**) time delay and to full clockwise for a maximum time delay.

The **REPEAT** control lets you control the length of time a tone is repeated (reverberation). Set **REPEAT** to **10** for the longest time and to 0 for the shortest time.

(illus)

USING THE 7-BAND FREQUENCY EQUALIZER

With the seven sliding frequency controls, you can tailor the sound processed through the mixer to fit the acoustic surroundings and your personal taste.

Each control varies by ±12 dB the level of a narrow band of frequencies centered around the frequency noted between the controls (60 Hz, 150 Hz, 400 Hz, 1 kHz, 2.4 kHz, 6 kHz, and 15 kHz).

Set the **EQUALIZER BYPASS/ON** switch to **ON** to turn on the frequency equalizer. Then slide the control up to boost the indicated frequency range or down to reduce it.

Notes:

- If you set the control to the center position, the frequency range is unaltered.
- In order to provide smooth frequency control, the effect of these controls must overlap slightly. Thus, the 1 kHz control has a slight effect on the range of frequencies covered by the 400 Hz and the 2.4k Hz controls.

Frequency	Purpose
60 Hz	Adjusts the frequencies in the low bass range (low organ notes and bass drums). Reduces rumble or other low-frequency noise
150 Hz	Adjusts the frequencies in the low to middle bass range (low organ notes, bass drums, timpani and some low-bass)
400 Hz	Adjusts frequencies in the middle-bass range (timpani and some low-bass instruments)
1 kHz	Adjusts the range of frequencies in the middle frequency range where the ear is most sensitive (vocals).
2.4 kHz	Adjusts the range of frequencies in the upper middle frequency range that include vocals and some upper-midrange instruments (clarinet and saxophone)
6 kHz	Adjusts the range of frequencies in the lower high frequency range that include some vocals and upper-midrange instruments (clarinet and saxophone).
15 kHz	Adjusts high-frequency sounds (cymbals, flutes, and violins).

TROUBLESHOOTING

Your SSM-1000 Mixer should require very little maintenance. If you do have problems, refer to the troubleshooting chart below for possible solutions.

Caution: Only a qualified service technician should perform repairs on this SSM-1000 Mixer!

Problem	Solution
Nothing works	Check the AC power connection.
	Make sure the AC outlet is ''live''.
	Check the power connections to the rest of the system (amplifier/receiver, etc.)
No signal from an audio input source.	Check the control setting.
	Check the connections between the mixer and the input source.
Hum from PHONO	Connect the turntable's ground wire (usually black or green) to one of the GND screws on the back of the mixer.
Hum from other inputs	Make sure there are no low level inputs connected to the LINE 1 and 2 jacks.
Feedback "squeals"	Move the microphone farther away from the output speakers or use a directional microphone.

CARE AND MAINTENANCE

Your Radio Shack Audio SSM-1000 Mixer with Echo is an example of superior design and craftsmanship. The following suggestions will help you care for your SSM-1000 Mixer so you can enjoy it for years.

Keep the mixer dry. If it gets wet, wipe it dry immediately. Liquids might contain minerals that can corrode the electronic circuits.

Use and store the mixer only in normal temperature environments. Temperature extremes can shorten the life of electronic devices and distort or melt plastic parts.

Keep the mixer away from dust and dirt, which can cause premature wear of parts.

Handle the mixer gently and carefully. Dropping it can damage circuit boards and cases and can cause the mixer to work improperly.

Wipe the mixer with a damp cloth occasionally to keep it looking new. Do not use harsh chemicals, cleaning solvents, or strong detergents to clean the mixer.

Modifying or tampering with the mixer's internal components can cause a malfunction and might invalidate your mixer's warranty (and void your FCC authorization to operate it). If your mixer is not performing as it should, take it to your local Radio Shack store for assistance.

SPECIFICATIONS

Input Impedance

Microphone .....600 ohm (Low)
10k ohm (High)

Phono Magnetic 1 and 2 .....50k ohm

Phono Ceramic 1 and 2 .....100k ohm

Line 1 and 2 .....100k ohm

Output Level (Tape Out/Main Out) 2V

Sensitivity (Master volume at 10 (Max) position)

Microphone ..... 0.5 mV (Low)
2.5 mV (High)

Phono Magnetic 1 and 2 ..... 3 mV

Phono Ceramic 1 and 2 ..... 2V

Line 1 and 2 (±3 dB Range)..... 20–20 kHz

Signal-to-Noise (S/N) Ratio

Microphone ..... 55 dB

Phono Magnetic 1 and 2 ..... 65 dB

Line 1 and 2 ..... 70 dB
(T.H.D. at rated output (From 20 Hz to 20 kHz at Maximum Master Volume) 0.05 %)

Channel Separation at 1 kHz ..... 60 dB

Maximum Input Level

Microphone ..... 7 mV

Phono Magnetic 1 and 2 ..... 20 mV

Phono Ceramic 1 and 2 .....more than 1.2 V

Line 1 and 2 (at Maximum Master Volume) ..... more than 1 V

Control Frequency Accuracy..... +/- 10 %
(at 60 Hz, 150 Hz, 400 Hz, 1k Hz, 2.4k Hz, 6k Hz, 15k Hz)

Control Range at Rated Output .....+/- 12 dB

NOTES

RADIO SHACK LIMITED WARRANTY

This product is warranted against defects for 1 year from date of purchase from Radio Shack company-owned stores and authorized Radio Shack franchisees and dealers. Within this period, we will repair it without charge for parts and labor. Simply **bring your Radio Shack sales slip** as proof of purchase date to any Radio Shack store. Warranty does not cover transportation costs. Nor does it cover a product subjected to misuse or accidental damage.

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