



Cat. No. 32-3009  
**OWNER'S MANUAL**

Please read before using this equipment.

# SSM-1250



## 3-Channel Stereo Audio Mixer



**OPTIMUS®**



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

	<b>CAUTION</b> RISK OF ELECTRIC SHOCK. DO NOT OPEN.	
<b>CAUTION:</b> 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.

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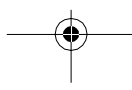
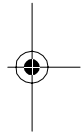
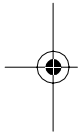
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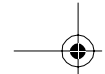


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## FEATURES

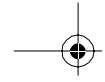
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Your Optimus SSM-1250 3-Channel Stereo Audio Mixer is a sophisticated control center, perfect for mixing sound from multiple audio sources on three separate channels such as microphones, tuners, CD players, turntables, or the audio outputs from VCRs. The mixer is ruggedly constructed for home or professional use. Its wide-range volume controls let you adjust each audio source's sound level so you can get the best mix for playing through your sound system or for recording.

- 1 DJ Microphone Input** — lets you connect a balanced, low impedance microphone with an XLR plug.
- 2 Microphone Treble** — lets you adjust the microphone's treble.
- 3 Microphone Bass** — lets you adjust the microphone's bass.
- 4 Assign Controls** — lets you select the input sources to be mixed.
- 5 Talkover** — lowers the sound of the input sources so you can talk over them using the microphone.
- 6 Slide Volume Controls** — for fingertip control of sound mixing and fading.
- 7 Cross Fader** — lets you smoothly switch between two input sources.
- 8 Input Source Selectors** — let you easily choose the desired audio input source to be played.
- 9 Master Volume** — lets you control the mixer's overall volume level.
- 10 Output Level VU Meters** — indicate the mixer's total output signal level.

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- so you can monitor and prepare it before mixing it in.
- 11 **Mono/Stereo Selector** — lets you set the output to stereo or monaural.
  - 12 **Bass/Middle/Treble Controls** — let you adjust the tone of the selected output to get just the right sound.
  - 13 **Cue Assign Controls** — lets you select the channel where the desired audio input source is located
  - 14 **Cue/Program Control** — lets you balance the volume of the output playing on the sound system and the input being prepared for mixing through the headphones.
  - 15 **Lamp Jack** — lets you connect a 12V DC lamp to light the mixer controls.
  - 16 **Phones Jack** — lets you connect a pair of stereo headphones with a 1/4-inch plug.
  - 17 **Cue Level** — lets you adjust the headphone's volume level.
  - 18 **Stereo Line Outputs** — let you connect the mixer's output to your receiver/amplifier and tape deck so you can play the sounds from your input sources through your speaker system, and record them.
  - 19 **Stereo Line Inputs** — let you connect most line-level audio sources such as a CD player, tape deck, tuner, camcorder, or VCR.
  - 20 **Stereo Phono Inputs** — for connecting low-level audio sources, such as turntables with a magnetic cartridge.
  - 21 **Microphone Input** — lets you connect a low impedance microphone with a 1/4-inch plug instead of one with an XLR plug.
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*illustration of mixer back*



## PREPARATION

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**Warning:** A sudden high output from the mixer could damage your hearing, especially if you use headphones, and might also damage the audio devices connected to the mixer's output. Before using the mixer, make sure you set your receiver/amplifier's volume control to its minimum volume level setting.

Before you connect the AC power cord, make sure you set **POWER** to off. And, to avoid sudden and unusable sound outputs from any audio devices that you connect to the mixer, be sure to have their power controls set to off (and any tone controls set to flat).

### *illustration of output AMP to sound system*

To record the mixer's output signal, connect one end of an audio patch cord (Cat. No. 42-2356, not supplied) to the mixer's **REC L** (white) and **R** (red) output jacks, then connect the other end to your tape deck's left and right line input jacks (matching left to left, and right to right).

## CONNECTING THE OUTPUTS

To play the mixer's output signal through your sound system (for events such as parties, dances, conferences, and so on), connect one end of an audio patch cord (Cat. No. 42-2356, not supplied) to the mixer's **AMP L** (white) and **R** (red) output jacks, then connect the other end to your receiver/amplifier's left and right line input jacks (matching left to left, and right to right).

### *illustration of output REC to recorder*

**AMP connections should still appear**

## CONNECTING THE INPUTS

You can connect up to four line-level and up to two low-level audio input sources to the input jacks on the back of the mixer. You can also connect a microphone to the mixer's front or back panel.

1. Connect the line-level outputs from up to four audio sources (such as a CD player, tape deck, tuner, camcorder, or VCR) to the **LINE 1**, **LINE 2**, **LINE 3**, and **LINE 4** input jacks (matching left to left, right to right).

*illustration of line-level connections*

*AMP and REC connections should also appear*

**Caution:** Do not connect an audio source with a line-level output to the low-level **PHONO 1** or **PHONO 2** input jacks.

2. Connect the low-level outputs from up to two audio sources (such as magnetic-cartridge turntables) to the **PHONO 1** and **PHONO 2** input jacks (matching left to left, right to right).

*illustration of low-level connections*

*AMP, REC, and line-level connections should also appear*

**Note:** If you connect magnetic-cartridge turntables, also connect their ground wires (usually black or green) to **GND**.

3. Connect a microphone (not supplied) to the mixer.

- If the microphone has an XLR plug, connect it to **MIC** on the top left corner of the front panel.

*illustration of microphone plug being inserted into jack*

*Do not show entire microphone*

- If the microphone has a 1/4-inch plug, connect it to **MIC** on the lower right corner of the back panel.

*illustration of microphone plug being inserted into jack*

*Do not show entire microphone*

**Note:** We recommend you do not connect an XLR and a 1/4-inch plug microphone to the mixer at the same time.

## CONNECTING POWER

Connect the power cord to a standard AC outlet.

**Note:** The power cord has a polarized plug that fits only one way into a standard AC outlet. If the plug does not fit, turn it clockwise so it fits properly. Do not force the plug into the AC outlet or you could damage the outlet or the plug.

## CONNECTING A LAMP

The mixer has a 12V BNC lamp socket for connecting a 12V DC/3W lamp (RSU Cat. No. 11443363) so you can see the control panel in dark or low-light conditions.

*illustration of lamp being connected*

**Caution:** Use only a 12V DC/3W lamp.





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## CONNECTING HEADPHONES

To listen in privacy or monitor the audio source inputs so you can locate an exact passage or section before mixing it, plug a pair of stereo headphones (not supplied) with a 1/4-inch plug into the **PHONES** jack on the mixer's right front panel.

### *illustration of headphones being connected*

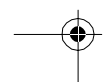
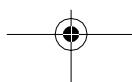
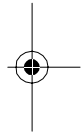
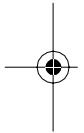
Your local RadioShack store carries a wide selection of headphones.

## Listening Safely

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

To protect your hearing when you use headphones, always follow these guidelines to set the listening volume.

- Set **CUE LEVEL** to the lowest setting before you begin listening.
- After you put on the headphones, adjust **CUE LEVEL** to a comfortable listening volume level.
- Once you set your headphones' volume, do not increase it. Over time, your ears adapt to the volume level, so a level that no longer causes discomfort might still damage your hearing.



## OPERATION

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1. Set the volume levels on the output devices (receiver/amplifier and tape deck) to minimum and turn them on.
2. Press **POWER** to turn on the mixer. The red power indicator lights.

### *illustration of POWER button w/indicator lit*

3. Turn on the input sources you want to mix.
4. Using the mixer requires two basic operations:
  - Presetting the input signal levels (see "Presetting the Input Signal Levels")
  - Mixing the audio input sources (see "Mixing the Inputs" on Page 15)
5. After you finish mixing, turn down the volume on the output audio devices, turn off the input and output audio devices (amplifiers, tape decks, and so on), then press **POWER** so it pops up to turn off the mixer. The power indicator turns off.

## PRESETTING THE INPUT SIGNAL LEVELS

To avoid accidentally overdriving a channel or prematurely mixing in an audio input source, make sure you start with the following settings:

- Volume slide controls set to **0**

### *illustration*

- **ASSIGN A** and **ASSIGN B** set to **OFF**

### *illustration*

- **MIC TREBLE, MIC BASS, CUE LEVEL, TREBLE, MID, BASS, and MASTER** set to **0**

### *illustration*

Rotate **MASTER** clockwise and temporarily set it to about the 5th marker.

*illustration*

**Note:** The **MASTER** volume control adjusts the overall volume of **DJ MIC**, **CH1**, **CH2**, and **CH3**.

The mixer uses two volume unit (VU) meters to indicate the total stereo output signal level. For the best results, each input signal level should normally be set so the VU meters never move into the red range (0 or above). Distortion is likely to occur on audio peaks if the meter moves into the red range.

*illustration of VU meters at 0*

For monaural output, set **MONO/STEREO** to **MONO**. For stereo output, set **MONO/STEREO** to **STEREO**.

*illustration of mixer front w/arrow to control*

## Presetting the Microphone

1. If your microphone has an ON/OFF control, set it to ON.
2. Set **OFF/ON/TALKOVER** to **ON**.

*illustration*

3. While continuously talking, adjust **DJ MIC** until you get a reading of up to 0 on both VU meters.

*illustration DJ MIC*

4. Set **OFF/ON/TALKOVER** to **OFF**.

## Presetting the Channel 1/2/3 Input Sources

Before you mix channels 1, 2, and 3, you must preset the input signal level for each channel input source (up to six sources).

If you did not connect an input source to every jack or do not want to mix every input source connected to the mixer's input jacks, you do not need to follow all the steps in this section. After you decide which source(s) you want to preset and mix, use this table to determine which steps to follow.

To Preset		See Steps
Channel 1	Phono 1	1–4
	Line 1	5
Channel 2	Phono 2	6–9
	Line 2	10
Channel 3	Line 3	11–14
	Line 4	15

**Notes:**

- While you adjust the input signal levels for channels 1, 2, and 3, either use the headphones or turn up the receiver/amplifier's volume to a comfortable listening level (not necessarily the final usable level).
- Do not play a quiet portion of music while you adjust the volume levels, otherwise the volume levels for channels 1, 2, and 3 will be overdriven during the loud portions of the music.

1. To preset the **PHONO 1** input source, set **PHONO 1/LINE 1** to **PHONO 1**.

*illustration of  
PHONO 1/LINE 1 set  
to PHONO 1*

2. Start playback of the selected input source.
3. Slowly slide up the **CH 1** volume level slide control until you get a reading of up to **0** on both VU meters.

*illustration of CH 1 control*

**Important:** Write down or remember the **CH 1** volume level slide control's setting for the selected audio source, so each time you want to mix that source you can slide the **CH 1** volume level slide control to the correct setting.

**Note:** If it was necessary to set the **CH 1** volume level slide control all the way to **10** in order to get a reading of up to **0** on the VU meter, then slide **CH 1** down to about **8** and rotate **MASTER** clockwise until you get the reading of **0** on the VU meters.

4. Stop playback of the selected input source.
5. To preset the **LINE 1** input source, set **PHONO 1/LINE 1** to **LINE 1**. Then repeat Steps 2–4.

**Note:** If you have to readjust **MASTER** when performing Step 3, remember that this affects the level of the previously preset input sources. You must readjust those sources until you get a reading of up to **0** on the VU meters for each.

6. To preset the **PHONO 2** input source, set **PHONO 2/LINE 2** to **PHONO 2**.

*illustration of  
PHONO 2/LINE 2 set  
to PHONO 2*

7. Start playback of the selected input source.
8. Slowly slide up the **CH 2** volume level slide control until you get a reading of up to **0** on both VU meters.

*illustration of CH 2 control*

**Important:** Write down or remember the **CH 2** volume level slide control's setting for the selected audio source, so each time you want to mix that source you can slide the **CH 2** volume level slide control to the correct setting.

**Note:** If it was necessary to set the **CH 2** volume level slide control all the way to **10** in order to get a reading of up to **0** on the VU meter, then slide **CH 2** down to about **8** and rotate **MASTER** clockwise until you get the reading of **0** on the VU meters.

9. Stop playback of the selected input source.
10. To preset the **LINE 2** input source, set **PHONO 2/LINE 2** to **LINE 2**. Then repeat Steps 7–9.

**Note:** If you have to readjust **MASTER** when performing Step 8, remember that this affects the level of the previously preset input sources. You must readjust those sources until you get a reading of up to **0** on the VU meters for each.

11. To preset the **LINE 3** input source, set **LINE 3/LINE 4** to **LINE 3**.

*illustration of  
LINE 3/LINE 4 set to  
LINE 3*

12. Start playback of the selected input source.

13. Slowly slide up the **CH 3** volume level slide control until you get a reading of up to **0** on both VU meters.

*illustration of CH 3 control*

**Important:** Write down or remember the **CH 3** volume level slide control's setting for the selected audio source, so each time you want to mix that source you can slide the **CH 3** volume level slide control to the correct setting.

**Note:** If it was necessary to set the **CH 3** volume level slide control all the way to **10** in order to get a reading of up to **0** on the VU meter, then slide **CH 3** down to about **8** and rotate **MASTER** clockwise until you get the reading of **0** on the VU meters.

14. Stop playback of the selected input source.
15. To preset the **LINE 4** input source, set **LINE 3/LINE 4** to **LINE 4**. Then repeat Steps 12–14.

**Note:** If you have to readjust **MASTER** when performing Step 13, remember that this affects the level of the previously preset input sources. You must readjust those sources until you get a reading of up to **0** on the VU meters for each.

16. To prevent prematurely mixing audio sources, set all volume level slide controls to **0**.

## Checking the Sound

1. Select one of the input sources, then start playback of the selected source.
2. Set the volume level slide control to the position you determined during presetting. The VU meters should show a reading of up to **0** dB.
3. Turn up the receiver/amplifier's volume until it reaches the desired level for the location or event where the mixer will be used (this can vary).
4. Adjust **BASS**, **MID**, and **TREBLE** to get the desired sound (see "Using the Tone Controls" on Page 18).
 

**Note:** If adjusting **BASS**, **MID**, and **TREBLE** causes the VU meters to exceed **0** dB, rotate **MASTER** counterclockwise until the reading returns to **0**. Then adjust your output device (amplifier) volume accordingly.
5. Stop playback of the selected input source.

**Note:** Do not adjust **MASTER** after checking the sound.

## MIXING THE INPUTS

You can connect input signals from up to six audio sources, select any two, then mix them so only one or both play through your sound system.

Mixing requires three operations:

- Playing one input source
- Monitoring the next input source
- Switching to the next input source

You can play either of the two selected sources first.

### Notes:

- Ensure the volume level slide control for the other input channel source is set to 0.
- The CUE ASSIGN switches are push-on and push-off. You can select more than one at a time.

## Playing One Input Source

1. Set **ASSIGN A** to the desired source, then set **CROSS FADER** to **A**.

*illustration of ASSIGN A set to 1 and CROSS FADER set to A*

2. Set the input source selector to the preset input source you want to play first through your sound system.

### *illustration*

3. Make sure the first input source's volume level slide control is set to the correct preset position.
4. Start playback of the input source.

## Monitoring a Second Input Source

Monitoring a second input source's signal level requires selecting the input source that is *not* currently playing, finding the desired section you want to mix, then adjusting that source's sound level so it matches the volume level of the source currently playing.

1. Connect and put on headphones.

**Note:** You can listen to one channel through the headphones while the other channel is playing through the sound system.

2. Set **ASSIGN B** to the second input source.

3. Press **CUE ASSIGN** for the second input source.

***illustration of CUE ASSIGN with arrow to CH 2***

4. Set the input source selector to the input source you want to monitor.

***illustration***

5. Start playback of the input source you want to play next through your sound system.
6. If necessary:
  - Adjust **CUE LEVEL** to a comfortable listening level.
  - Adjust the second input source volume slide control to the correct preset position.
7. Set the input device to the desired section of music, then stop or pause the input device.

### **Switching to the Second Input Source**

1. Start playback of the second input source.
2. When you are ready to play its sound through your sound sys-

tem, slide **CROSS FADER** from **A** to **B**.

***illustration of CROSS FADER w/arrow from A to B***

Slide **CROSS FADER**:

- To the *left* to fade in the channel selected by **ASSIGN A** and fade out the channel selected by **ASSIGN B**.
- To the *right* to fade in the channel selected by **ASSIGN B** and fade out the channel selected by **ASSIGN A**.
- To the *center* to equally mix the two.

### **Notes on Mixing**

- If you set **CROSS FADER** to **A** to play the channel selected by **ASSIGN A**, then you must set **CUE ASSIGN** to **CH 1** to monitor **CH 1**, to **CH 2** to monitor **CH 2**, to **CH 3** to monitor **CH 3**, to **CH 4** to monitor **CH 4**, and to **MIC** to monitor **DJ MIC**. The same applies when you set **CROSS FADER** to **B**.
- To mix any two inputs selected by the **ASSIGN** switches, set each **ASSIGN** switch to the desired channel. Then use **CROSS FADER** to mix the two.



## USING TALKOVER

### *Illustration of switch set to TALKOVER*

- Do not slide **CROSS FADER** to the center if you want to *monitor* one channel while the other is playing. Otherwise, the sound from the channel you monitor will also be heard through your sound system. Instead, slide **CROSS FADER** to the channel you are not monitoring. For example, to monitor channel 1 (selected by **ASSIGN A**) while channel 2 (selected by **ASSIGN B**) is playing, slide **CROSS FADER** to **B**.
- Use **CUE/PGM** to listen to the input controlled by the **CUE ASSIGN** switch and what is playing on the currently selected output device. When **CUE/PGM** is set to **CUE**, you only hear the channel selected by the **CUE ASSIGN** switches. When **CUE/PGM** is set to **PGM**, you only hear what is playing on the currently selected output device. Rotate **CUE/PGM** to listen to both inputs at the same time.

When you are not using the microphone, leave **OFF/ON/TALKOVER** set to **OFF**. The microphone's input is turned off and all other audio input sources are unaffected.

If you want to use a microphone:

- Set **OFF/ON/TALKOVER** to **ON** to mix the microphone equally with the other audio input sources.
- Set **OFF/ON/TALKOVER** to **TALKOVER** to mix the microphone at a higher level than the other audio input sources.

Your voice sounds clearly through the microphone, but all the other audio input sources sound at a lower level. (This is useful for paging.)

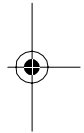
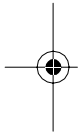


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## USING THE TONE CONTROLS

Your mixer has one set of tone controls for the microphone and another set for channels 1, 2, and 3. You can tailor the high and low frequency sounds for the microphone and tailor the high, low, and mid frequency sounds for channels 1, 2, and 3.

### *illustration of mixer front w/arrows to the control locations*

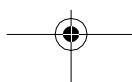


For normal sound, leave **BASS**, **MID**, and **TREBLE** (or **MIC BASS** and **MIC TREBLE** for the microphone) set to **0**.

Rotate **TREBLE** (or **MIC TREBLE**) toward **+10** to increase, or toward **-10** to decrease the high frequency sounds.

Rotate **MID** toward **+10** to increase or toward **-10** to decrease the middle frequency sounds.

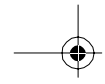
Rotate **BASS** (or **MIC BASS**) toward **+10** to increase or toward **-10** to decrease the low frequency sounds.



## **TROUBLESHOOTING**

With proper care and handling, your mixer should give you years of trouble-free service. However, if your SSM-1250 is not working properly, follow these suggestions to see if you can eliminate the problem. If you cannot, take the mixer to your local RadioShack store for assistance.

<b>Problem</b>	<b>Possible Solution</b>
Nothing works	Check the AC power connection and make sure the AC outlet is "live."
	Check all the connections to the system (amplifier/receiver, input sources, and so on).
	Check the fuse. See "Replacing the Fuse" on Page 21.
No signal from an audio input source	Make sure the <b>OFF/ON/TALKOVER</b> switch is not set to <b>TALKOVER</b> .
	Check the mixer's and the source's control settings.
	Check the connection between the mixer and the input source.
Hum from <b>PHONO</b> sources	Make sure the turntable's ground wire (usually black or green) is connected to the <b>GND</b> screw on the back of the mixer.
Hum from other input sources	Make sure there are no low-level inputs connected to the <b>LINE</b> input jacks.
Feedback "squeals"	Move the microphone further away from the output speakers or use a unidirectional microphone.



## CARE AND MAINTENANCE

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Your Optimus SSM-1250 3-Channel Stereo Audio Mixer is an example of superior design and craftsmanship. The following suggestions will help you care for your 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.

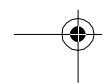
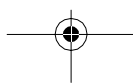


Handle the mixer gently and carefully. Dropping it can damage circuit boards and cases and can cause the mixer to work improperly.



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. If your mixer is not performing as it should, take it to your local RadioShack store for assistance.



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## REPLACING THE FUSE

The mixer uses a fuse for protection from power surges and short circuits. If the mixer suddenly turns off and will not turn on, check the fuse. If necessary, replace the fuse with a 0.5-amp, 250-volt, fast-acting,  $1\frac{1}{4} \times \frac{1}{4}$  inch fuse such as Cat. No. 270-1003 (not supplied).

Follow these steps to replace the fuse.

1. Disconnect power from the mixer.
2. Using a Phillips screwdriver, unscrew the fuse compartment cap on the back of the mixer.

*illustration*

3. Remove the old fuse and insert the new one.

**Caution:** Make sure you replace the fuse only with another fuse of the same type and rating.

4. Replace the fuse compartment cap.
5. Reconnect power.

## SPECIFICATIONS

### Input Sensitivity/Input Impedance

DJ Mic (XLR jack) .....	1.5 mV/600 Ohms, Balanced/Unbalanced
Mic 2 (Phone jack) .....	1.5 mV/600 Ohms, Balanced/Unbalanced
<b>PHONO 1, PHONO 2</b> .....	3 mV/50 kOhms
<b>LINE 1, LINE 2, LINE 3, LINE 4</b> .....	150 mV/10 kOhms

### Output Level

Main Out .....	2 V/10 kOhms
Record .....	100 mV/10 kOhms
Frequency Response .....	20 Hz–20 kHz +3 dB

### S/N Ratio (for 1 kHz Input)

Mic .....	60 dB
Phono .....	70 dB
Line .....	80 dB

### Distortion

Mic .....	0.2%
Phono .....	0.05%
Line .....	0.03%

### Tone Control (**MIC**)

Treble .....	±10 dB
Bass .....	±10 dB

### Tone Control (**MASTER**)

Treble .....	±10 dB
Middle .....	±10 dB
Bass .....	±10 dB

Talkover Attenuation ..... –16 dB

Power Source ..... AC 120V AC, 60 Hz, 20 Watts

Dimensions (HWD) ..... 4<sup>3</sup>/<sub>4</sub> × 19 × 7<sup>1</sup>/<sub>2</sub> Inches  
(120 × 482 × 192 mm)

Weight ..... 8 lbs 9 oz  
(3.9 kg)

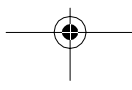
Specifications are typical; individual units might vary. Specifications are subject to change and improvement without notice.

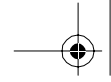


# NOTES

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### Limited One-Year Warranty

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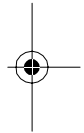
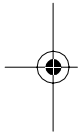
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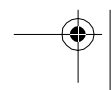
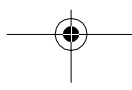
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