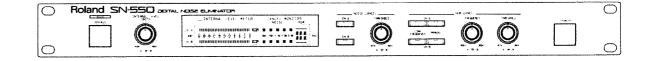
DIGITAL NOISE ELIMINATOR

SN-550

OWNER'S MANUAL





CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK.

DO NOT REMOVE COVER (OR BACK).

NO USER-SERVICEABLE PARTS INSIDE.

REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



The lightning flash with arrowhead symbol, within an 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 to persons.



The exclamation point within an equilateral triangle is intended to aleft the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

INSTRUCTIONS PERTAINING TO A RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS.

IMPORTANT SAFETY INSTRUCTIONS

WARNING — When using electric products, basic precautions should always be followed, including the following:

- 1. Read all the instructions before using the product.
- Do not use this product near water for example, near a bathtub, washbowl, kitchen sink, in a wet basement, or near a swimming pool, or the like.
- This product should be used only with a cart or stand that is recommended by the manufacturer.
- 4. This product, either alone or in combination with an amplifier and headphones or speakers, may be capable of producing sound levels that could cause permanent hearing loss. Do not operate for a long period of time at a high volume level or at a level that is uncomfortable. If you experience any hearing loss or ringing in the ears, you should consult an audiologist.
- The product should be located so that its location or position does not interfere with its proper ventilation.
- The product should be located away from heat sources such as radiators, heat registers, or other products that produce heat.
- Avoid using the product where it may be effected by dust.
- The product should be connected to a power supply only of the type described in the operating instructions or as marked on the product.

- The power-supply cord of the product should be unplugged from the outlet when left unused for a long period of time.
- 10. Do not tread on the power-supply cord.
- 11. Do not pull the cord but hold the plug when unplugging.
- When setting up with any other instruments, the procedure should be followed in accordance with instruction manual.
- Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
- 14. The product should be serviced by qualified service personnel when:
 - The power-supply cord or the plug has been damaged; or
 - B. Objects have fallen, or liquid has been spilled into the product; or
 - C. The product has been exposed to rain; or
 - The product does not appear to operate normally or exhibits a marked change in performance; or
 - E. The product has been dropped, or the enclosure damaged
- 15. Do not attempt to service the product beyond that described in the user-maintenance instructions. All other servicing should be referred to qualified service personnel.

SAVE THESE INSTRUCTIONS

- For the U.K. -

WARNING: THIS APPARATUS MUST BE EARTHED

IMPORTANT: THE WIRES IN THIS MAINS LEAD ARE COLOURED IN ACCORDANCE WITH THE FOLLOWING CODE. GREEN-AND-YELLOW: EARTH, BLUE: NEUTRAL, BROWN: LIVE

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:

The wire which is coloured GREEN-AND-YELLOW must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol 😩 or coloured GREEN or GREEN-AND-YELLOW.

The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured BLACK. The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured RED.

The product which is equipped with a THREE WIRE GROUNDING TYPE AC PLUG must be grounded.

Thank you for purchasing the Roland SN-550 Digital Noise Eliminator. The SN-550 includes both noise and hum canceling units that can effectively reduce noise during live performances and studio recordings. To make the best use of this device, please read this owner's manual carefully.

FEATURES

- •The SN-550 includes both noise and hum canceling units which can reduce the noise generated by musical instruments or variable lighting systems, the hum caused by power supplies or picked up by microphones and guitars, the tape hiss of analog recording equipment etc. It can therefore be effectively used in live performance or studio recording situations.
- In the noise canceling unit, the input signal is divided into five bands. This makes it possible to reduce the noise in a specific frequency range of each band, therefore effectively removing the noise from the input signal.
- •The hum canceling unit removes hum with minimal tonal alteration. It effectively removes the hum caused by power supply lines with an automatic power supply frequency detecting system.
- Owing to the latest signal processing technology, fine adjustments can be made quickly and easily.

- The SN-550 features a monitoring function that allows you to monitor the noise and hum canceling operations.
- •An internal level-controlling system is used to adjust the signal without affecting the input or output level.
- •The SN-550 has two completely independent channels for signal processing and therefore can be connected to a stereo sound source or two mono sound sources, with different settings for each source.
- Both 1/4 inch phone and XLR balanced connectors are provided for input and output so that the SN-550 can be used with various types of devices.
- •Analog circuits are constructed with discrete systems at all stages to ensure high quality sound.
- ◆The SN-550 features a bypass (on/off) switch. When this switch is turned on, the input signal will be output without passing through the internal circuits.

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■ Structure of the SN-550 ······5	■ Settings ······
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■ IMPORTANT NOTES

In addition to the items listed under Safety Precautions on page 2, please read and adhere to the following:

[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 a device which draws a lot of power.
- Avoid damaging the power cord; do not step on it, place heavy objects on it etc.

[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.
- This unit may interfere with radio and television reception. Do not use 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 benzene, 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.
- Never strike or apply strong pressure to the display.
- A small amount of heat will radiate from the unit, and thus should be considered normal.
- Before using the unit in a foreign country, consult with qualified service personnel.
- Should a malfunction occur (or if you suspect there is a problem) discontinue use immediately. Contact qualified service personnel as soon as possible.

STRUCTURE OF THE SN-550

There are various types of noise; noise generated by a unit itself, hum noise caused by the power supply line, noise caused by a variable lighting system, a CRT display or computer.

Earlier noise reduction or noise gate units have been effective for high pitch noise but not so for middle or low pitch noise. Such devices are almost useless for hum caused by power supplies.

The SN-550, however, resolves such problems with the latest signal processing technology while minimizing tonal alteration during the noise elimination process.

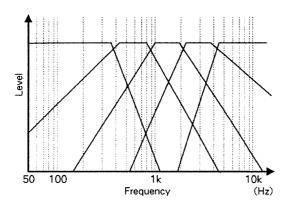
Noise Canceling

How noise is actually perceived by a listener varies depending on the volume difference between the audio signal and noise and/or the difference in the frequency content of the audio signal and noise. For example, when a sound is loud, you may not notice the noise, but when the sound is low, the noise may audible. Also, even when the noise is low, if the frequency content of the audio signal differs from that of the noise, the noise may be prominent. The SN-550's noise canceling unit functions in response to the situations described above.

The SN-550's noise canceling unit divides the audio signal into five bands. Each band has a noise suppresser. When the input signal drops below the threshold level, the noise canceling circuitry will start working. That is, it controls the noise reduction level depending on the level of the input signal. When the threshold level is raised, the noise reduction effect will be more pronounced but the sound quality will be adversely affected. To achieve a satisfactory result you must set the threshold level while actually listening to the noise reduction effect and the subsequent sound quality alteration.

The SN-550's noise canceler reduces noise in individual frequency bands as described above.

Noise Canceling Characteristic (5 bands: 350, 700, 1.4 k, 2.8 k, 5.6 kHz)

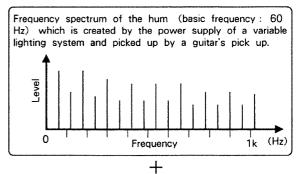


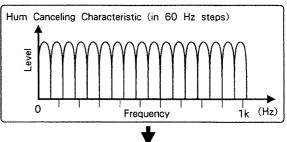
Hum Canceling

The SN-550's hum canceling unit is an updated version of a unit used in previous Roland products. This updated unit is even more effective for removing hum and has less impact on the resulting with sound quality.

Hum is a low frequency noise consisting of several harmonically related frequencies and results from the interaction of some electronic device and the power supply. Hum consists of the harmonics related to the frequency of the power supply (usually 50 or 60 Hz). Ordinary hum cancelers remove these harmonics by use of a "comb filter". Hum noise can be reduced by using a comb filter, but it may alter or eliminate portions of the audio signal in the same frequency range.

To minimize such problems, the SN-550 uses a suppressor that works only on the frequency that has the same harmonics as the hum. The lower the input signal is below the threshold level, the greater the hum canceling effect.

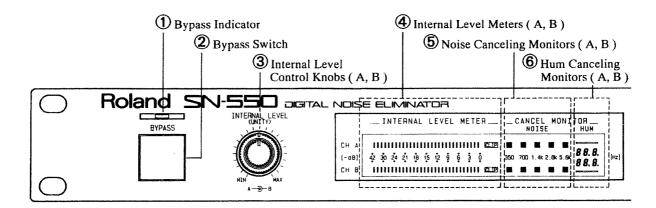




The hum is removed.

PANEL DESCRIPTION

< Front Panel >



1 Bypass Indicator

This is lit when the Bypass Switch is turned on.

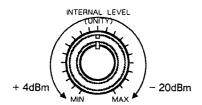
2 Bypass Switch

When this switch is turned on, the input signal will be output without passing through the internal circuits. The Bypass Switch can be switched on or off even while the unit is turned off. (In this case, the Bypass Indicator will not light.)

- * When the Bypass Switch is switched on, the noise and hum canceling functions will be turned on, but this will not affect the output signal.
- * When the input and output signal is unbalanced, the output level will depend on whether the Bypass Switch is on or off. This, however, is normal on this unit.

3 Internal Level Control Knobs (A, B)

Use this knob to change the signal level of the internal circuits depending on the output level of the connected unit. (This knob covers the output level of the connected unit from -20 to +4 dBm.)



* Changing the Internal Level Control Knobs does not affect the output level of the SN-550.

4 Internal Level Meters (A, B)

These meters indicates the signal level of the internal circuits. Since these are peak reading meters, you can determine the maximum level. An appropriate signal level is between -18 and OdB.

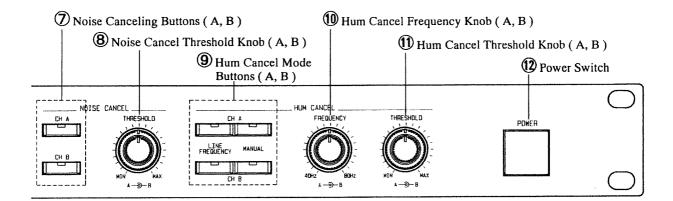
* When the CLIP indicator is lit, the signal will not be properly processed.

⑤ Noise Canceling Monitors (A, B)

These displays indicate when the noise canceling function is working in each frequency band. When the indicator is lit, the noise canceling circuitry is working in that frequency band.

6 Hum Canceling Monitors (A, B)

These displays indicate the basic frequency where the hum canceler works and whether the hum canceler is working or not. When the hum canceler is working, the indicator above (channel A) and/or below (channel B) the basic frequency display will light.



Noise Canceling Buttons (A, B)

These buttons switch the noise canceling function on and off. When on, the indicator will light.

8 Noise Cancel Threshold Knob (A, B)

This knob sets the input level at which the noise canceler starts working.

9 Hum Cancel Mode Buttons (A, B)

These buttons select either the Line Frequency or Manual hum canceling mode. When selected, the indicator will light.

• Line Frequency Button

Press this button to remove the hum generated by the power supply line. When it is turned on, the basic frequency of the hum canceler will synchronize to the power supply frequency.

Manual Button

Press this button to set the basic frequency of the hum canceler with the Frequency Control Knob.

* The Line Frequency button covers hum noise whose basic frequency is from 40.0 to 500 Hz. When this range is exceeded, the button will flash and the display will respond as shown below, indicating that the hum canceling function is not working.

below 40.0 Hz :

LO. F.

over 500. Hz:

HI. F.

* You can select a different mode for each channel, but not two modes for one channel at the same time.

10 Hum Cancel Frequency Knob (A, B)

This sets the basic frequency for the hum canceler.

Variable range: 40.0 — 49.0Hz (0.1Hz steps) 49.0 — 50.0Hz (0.2Hz steps)

* When the Hum Cancel Mode is set to Line Frequency, the basic frequency is automatically set to match the power supply frequency, and therefore the position of the Hum Cancel Frequency Knob is irrelevant.

1 Hum Cancel Threshold Knob (A, B)

This knob adjusts the input level at which the hum canceler starts working.

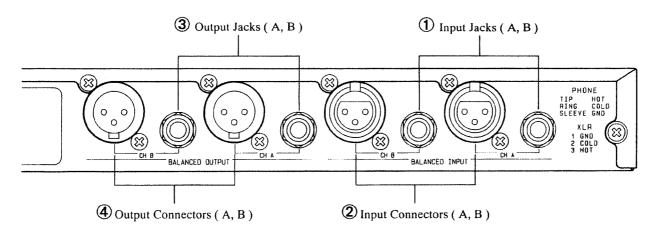
* The Hum Cancel Threshold Knob works when either the Line Frequency or Manual mode is selected.

12 Power Switch

This switches the SN-550 on and off.

* When the SN-550 is switched on, the Hum Cancel function is automatically set to Line Frequency and the Noise Cancel function is activated.

< Rear Panel >



1 Input Jacks (A, B)

These are balanced 1/4 inch stereo phone jacks. Unbalanced inputs (mono 1/4 inch phone plugs) can also be connected.

2 Input Connectors (A, B)

These are balanced XLR connectors. These connectors are secured by simplified stoppers and therefore will not be disconnected even if you pull the connector cables fairly hard.

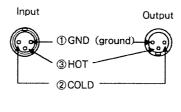
3 Output Jacks (A, B)

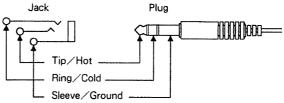
These are balanced 1/4 inch stereo phone jacks. Unbalanced outputs (mono 1/4 inch phone plugs) can also be connected.

4 Output Connectors (A, B)

These are balanced XLR connectors.

* Do not use the Input Connectors and Input Jacks (or Output Connectors and Output Jacks) at the same time: damage could result. The pin assignments for the XLR connectors (and 1/4 inch phone jack/plugs) are as follows: Before making any connections, confirm pin assignment compatibility with all other devices.

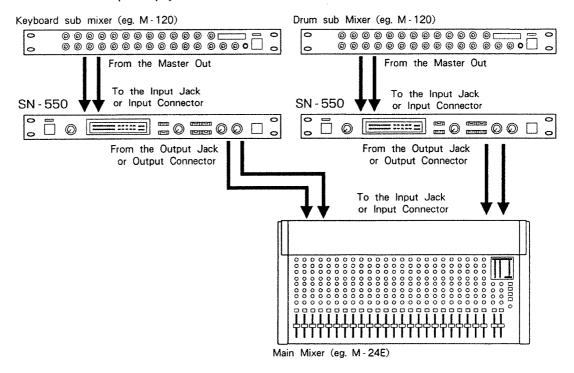




The following are example connections.

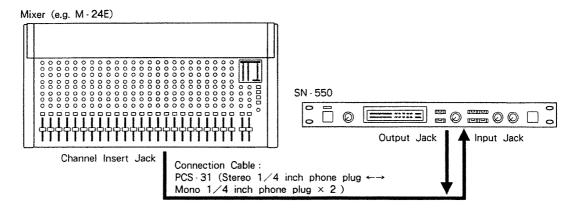
Connecting the SN-550 before a main mixer

If you wish to remove the noise of connected instruments, set up the SN-550 between the sub mixer and main mixer as shown below. By connecting the SN-550 just before the main mixer, the noise picked up by the cables of the mixers can also be removed.



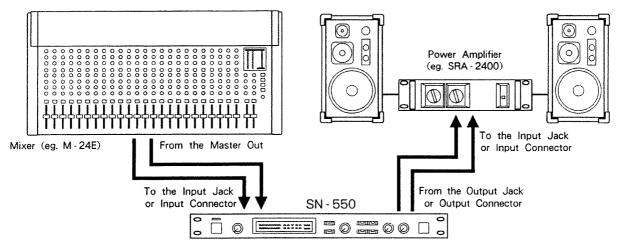
Connecting the SN-550 to the Channel Insert Jack

If you wish to remove hum or noise of a specific channel, connect the SN-550 to the Channel Insert Jack.



Connecting the SN-550 between a mixer and power amplifier

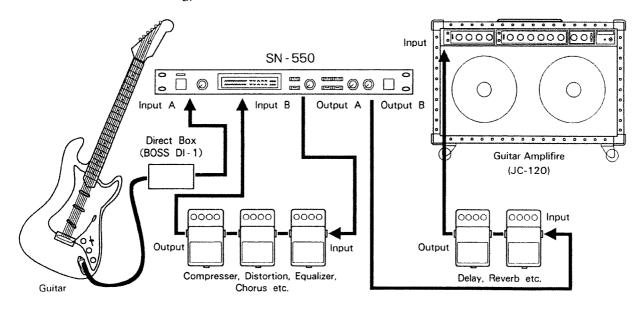
If you wish to remove the hum or noise caused by a variable lighting system or computer, or noise picked through a microphone or white noise in the overall system, connect the SN-550 just before the power amplifier.



Connecting the SN-550 to a guitar

When you use an effect unit, you can obtain successful results by using the SN-550 twice as shown below.

When you use a delay or reverb unit, connect the SN-550 just before it. (If you connect the SN-550 after the delay or reverb, the reverberation time may be shortened.) When using a multi-effects unit, connect the SN-550 to the Send/Return Jack and set it so that the delay/reverb will be connected just before the SN-550. In this case, to minimize sound deterioration and maximize the effect, use only the noise canceling function in channel A and both the noise and hum canceling functions in channel B.





The following explains the basic settings of the SN-550.

- Switch on the SN-550 and the connected units. Switch on the power amplifier (or guitar amplifier) last. (Switch the units off in reverse order.)
- * This unit is equipped with a circuit protection device. A brief interval after power up is required before the unit will operate.
- * When the SN-550 is switched on, the Line Frequency mode in the hum canceler and the noise canceler will be automatically selected.
- Peed the audio signal into the SN-550. Set the Internal Level Control Knob so that the Internal Level Meter reads between 18 and 0dB; the CLIP indicator should not light. When using a stereo signal, set both the channels to the same position.
- * When the CLIP indicator is lit, the signal is not being processed properly.
- 3 Set each channel of the hum and noise cancelers depending on the conditions:
- * If you change the internal level after having set the noise and hum cancelers, set each threshold level again.

< To remove the hum caused by power supply line >

To remove the hum picked up through a microphone or guitar or caused by a variable lighting system, set the hum canceler as indicated below. If the hum has not been reduced, set the basic frequency using the manual mode. (See next column.)

- Press the Hum Cancel Line Frequency Button. (This will automatically adjust the basic frequency of the hum canceler to the power supply frequency.)
- With no audio signal present, rotate the Hum Cancel Threshold Knob clockwise from the MIN position so that the hum disappears.
- While an audio signal is present, adjust the Hum Cancel Threshold Knob: find the position which provides minimum tonal alteration.

< To remove hum from other sources >

To remove the hum caused by a CRT display or computer (that is not related to the power supply frequency), set the hum canceler as follows

- Press the Hum Cancel Manual Button.
- 2 Set the Hum Cancel Threshold Knob to the MAX position and adjust the basic frequency using the Hum Cancel Frequency Knob until the hum disappears.
- With no audio signal present, rotate the Hum Cancel Threshold Knob clockwise from the MIN position until the hum disappears.
- While an audio signal is present, adjust the Hum Cancel Threshold Knob: find the position which provides minimum tonal alteration.

< To remove white noise / hiss noise >

If you wish to remove the white noise generated by the connected units or noise picked through a microphone or analogue tape hiss, set the noise canceler as follows.

- Press the Noise Cancel Button to turn on the noise canceling function.
- With no audio signal present, rotate the Noise Cancel Threshold Knob clockwise from the MIN position so that the noise disappears.
- While an audio signal is present, adjust the Noise Cancel Threshold Knob: find the position which provides minimum tonal alteration.

<To remove hum and noise >

If noise or hum is heard while no audio signal is present, first set the hum canceler and then the noise canceler. While an audio signal is present, set each threshold level of each channel. Again, find settings which degrade the input signal as little as possible.

* The SN-550's hum canceler circuitry appears first in the signal path. Be sure to set the hum canceler first, then the noise canceler.

■ SPECIFICATIONS

Signal Processing

Sampling Frequency

48 kHz

Frequency Response

20 Hz - 20 kHz (+0.2/-3 dB)

• Nominal Input/Output Level

-20 — +4 dBm (balanced input and output level is the same) Nominal Input Output Level = Maximum Level -14 dB 0 dBm = 0.775 Vrms

Maximum Input/Output Level

+24 dBm (balanced input output, internal level : MIN)

• Input Impedance

Balanced Input $20 \text{ k }\Omega$ Unbalanced Input $10 \text{ k }\Omega$

Output Impedance

Balanced Output 600 Ω Unbalanced Output 300 Ω

● Total Harmonic Distortion

Less than 0.02 % (at 1 kHz, +4 dBm nominal input)

● S/N Ratio

More than 80 dB (IHF-A, +4 dBm nominal input)

Dynamic Range

More than 94 dB

Controls

Internal Level Control Knob × 2

Noise Cancel Button \times 2

Noise Cancel Threshold Knob × 2

Hum Cancel Line Frequency Button × 2

Hum Cancel Manual Button × 2

Hum Cancel Frequency Knob × 2

Hum Cancel Threshold Knob × 2

Power Switch × 1

Bypass Switch × 1

Display

LCD Type

Indicators

Bypass Indicator

Noise Cancel Indicators (ch A, ch B)

Hum Cancel Line Frequency Indicators (ch A, ch B)

Hum Cancel Manual Indicators (ch A, ch B)

Connectors

Balanced Input Jack (1/4 inch stereo phone type) \times Balanced Input Connector (XLR type) \times Balanced Output Jack (1/4 inch stereo phone type) \times Balanced Output Connector (XLR type) \times

Power Supply

AC 117 V, AC 220 V, AC 240 V

• Power Consumption

32 W

Dimensions

482 (W) \times 340 (D) \times 44 (H) mm 19 (W) \times 13 - 3/8 (D) \times 1 - 3/4 (H) inches (EIA-1U rack mount type)

Weight

4.8 kg

10.5 lbs

Accessories

Owner's Manual

Options

 System Rack
 SYR-10

 Hard Case
 TB-2U/4U/7U/12U

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

Information

•When you need repair service, call your local Roland Service Station or the authorized Roland distributor in your country as shown below.

U. S. A.

Roland Corp US 7200 Dominion Circle Los Angeles, CA. 90040 - 3647 U. S. A.

2 (213)685 - 5141

CANADA

Roland Canada Music Ltd. (Head Office) 13880 Mayfield Place Richmond B. C., V6V 2E4 CANADA

2 (604)270 - 6626

9425 Transcanadienne Service Rd. N., St Laurent, Quebec H4S 1V3 CANADA **25** (514)335 - 2009

Roland Canada Music Ltd.

Roland Canada Music Ltd.
346 Watline Avenue,
Mississauga, Ontario L4Z 1X2
CANADA
2 (416)890 - 6488

AUSTRALIA

Roland Corporation (Australia)Pty. Ltd. (Head Office) 38 Campbell Avenue Dee Why West. NSW 2099 AUSTRALIA 27 (02)982 - 8266

Roland Corporation (Australia)Pty. Ltd. (Melbourne Office) 50 Garden Street South Yarra, Victoria 3141 AUSTRALIA 2 (03)241 - 1254

NEW ZEALAND

Roland Corporation (NZ)Ltd 97 Mt. Eden Road, Mt. Eden, Auckland 3 NEW ZEALAND \$\alpha\$ (09)398 - 715

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Roland(UK)Ltd.
Amalgamated Drive
West Cross Centre, Brentford,
Middlesex TW8 9EZ,
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28 (81)568 - 4578

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2 014 - 58 45 35

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DK - 1023 Copenhagen K.
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331 - 95 31 11

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20 08 - 702 00 20

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Länsituulentie
POB 169
SF - 02101 Espoo
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27 0 - 43 50 11

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Roland Italy S. P. A.
Viale delle Industrie 8
20020 ARESE MILANO
ITALY
202 - 93581311

SPAIN

Roland Electronics de España S. A. Bolivia 239 08020 Barcelona SPAIN \$\frac{1}{2} 93 - 308 - 1000

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Musitronic AG
Gerberstrasse 5, CH - 4410
Liestal
SWITZERLAND
2001/921 1615

Roland CK (Switzerland) AG
Hauptstrasse 21
CH - 4456 Tenniken
SWITZERLAND
TO 061/98 60 55
Repair Service by Musitronic AG

FRANCE

Musikengro 102, Avenue Jean - Jaures 69007 Lyon Cedex 07 FRANCE ☎ (7)858 - 54 60

Musikengro (Paris Office) Centre Region Parisienne 41 rue Charles - Fourier, 94400 Vitry s/Seine FRANCE \$\frac{1}{1}\$ (1)4680 86 62

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E. Dematte &Co.
Neu - Rum Siemens - Strasse 4
A - 6021 Innsbruck Box 591
AUSTRIA

T 43(05222)63 451

GREECE

V. Dimitriadis & Co. Ltd. 2 Fidiou Str., GR 106 78 Athens GREECE 23 3620130

PORTUGAL

Casa Caius Instrumentos Musicais L.da. Rua de Santa Catarina 131 Porto PORTUGAL 20 02 - 38 44 56

HUNGARY

Intermusica Ltd.
Warehouse Area 'DEPO'
Budapest, P.O. Box 3,
2045 Torokbalint
Budapest
HUNGARY
201868905

BRAZIL

Oliver do Brazil S.A. Instrumentos Musicais Rua Ludovico Ariostos, 55 Butanta Cep. 05542. Sao Paulo - SP BRAZIL \$\mathbf{T}\$ 5511 869 2561

For West Germany

Bescheinigung des Herstellers/Importeurs

Hiermit wird bescheinigt, daß der/die/das

Roland DIGITAL NOISE ELIMINATOR SN-550

(Gerät. Typ. Bezeichnung)

in Übereinstimmung mit den Bestimmungen der Amtsbl. Vfg 1046/1984

(Amtsblattverfügung)

funk-entstört ist.

Der Deutschen Bundespost wurde das Inverkehrbringen dieses Gerätes angezeigt und die Berechtigung zur Überprüfung der Serie auf Einhaltung der Bestimmungen eingeräumt.

Roland Corporation Osaka/Japan

Name des Herstellers/Importeurs

- For the USA-

RADIO AND TELEVISION INTERFERENCE

This equipment has been verified to comply with the limits for a Class B computing device, pursuant to Subpart J, of Part 15, of FCC rules. Operation with WARNING --non-certified or non-verified equipment is likely to result in interference to radio and TV reception.

The equipment described in this manual generates and uses radio frequency energy. If it is not installed and used properly, that is, in strict accordance with our instructions. it may cause interference with radio and television reception. This equipment has been tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J, of Part 15, of FCC Rules. These rules are designed to provide reasonable protection against such a interference in a rasidential installation. However, there is no guarantee that the interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment on and off, the user is encouraged to try to correct the interference by the following measure:

Disconnect other devices and their input/output cables one at a time. If the interference stops, it is caused by either the other device or its I/O cable.

- These devices usually require Roland designated shielded I/O cables. For Roland devices, you can obtain the proper shielded cable from your dealer. For non Roland devices, contact the manufacturer or dealer for assistance.
- If your equipment does cause interference to radio or television reception, you can try to correct the interference by using one or more of the following measures.

 Turn the TV or radio antenna until the interference stops.

 Move the equipment to one side or the other of the TV or radio.

- Move the equipment farther away from the TV or radio.

 Plug the equipment into an outlet that is on a different circuit than the TV or radio. (That is, make certain the equipment and the radio or television set are on circuits con-
- Tolled by different circuit breakers or fuses.)

 Consider installing a rooftop television antenna with coaxial cable lead-in between the antenna and TV. If necessary, you should consult your dealer or an expenenced radiotelevision technician for additional suggestions. You may find helpful the following booklet prepared by the Federal Communications Commission:

 "How to Identify and Resolve Radio TV Interference Problems"

 This booklet is available from the U.S. Government Printing Office, Washington, D.C., 20402, Stock No. 004-000-00345-4.

For Canada

CLASS B

NOTICE

This digital apparatus does not exceed the Class B limits for radio noise emissions set out in the Radio Interference Regulations of the Canadian Department of Communications

CLASSE B

AVIS

Cet appareil numérique ne dépasse pas les limites de la classe B au niveau des émissions de bruits radioélectriques fixés dans le Réglement des signaux parasites par le ministère canadien des Communications.







Roland