

**RT-2**  
**User Guide**  
**Rack Tray**



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## Printing History

SoundPals™ RT-2 Rack Tray

Rev. N/C

March 2007

Printed in U.S.A.

Part Number **08-2024-00**

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## FCC Compliance

This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at your own expense.

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## Warranty Statement

Graham-Patten warrants that the equipment it manufactures is free from defects in workmanship and materials and meets applicable published specifications. Equipment that has been operated within published ratings and has not been subjected to abuse or modification, and which fails because of such defects, will be replaced or repaired at the Company's discretion if it is returned, freight prepaid, to Graham-Patten within seven years of receipt.

This warranty supersedes all other Warranties, express or implied. Graham-Patten is not liable for any consequential damages.

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# Introduction

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## Warnings

Please observe the following important warnings:

- Heed all warnings on the unit and in the instructions.
- Do not use this product in or near water.
- Route power cords and other cables so that they are not likely to be damaged. Disconnect power before cleaning. Do not use liquid or aerosol cleaners; use only a damp cloth.

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## Unpacking and Inspection

When you receive your RT-2 tray, inspect the carton for signs of damage. Contact your dealer and the shipper *immediately* if you suspect any damage has occurred during shipping. Check the contents of the box to be sure that all parts are included. If any items are missing, contact your dealer immediately.



# RT-2

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## Product Description

The RT-2 rack tray provides a means of mounting up to a maximum of three SoundPals modules in a standard 19" equipment rack. The RT-2 is equipped with a single PSU-1 universal power supply. A second PSU-1 supply may be fitted as an option.

Other important features of the RT-2 include:

- Power distribution system with backup power supply fault indicator
- Rack slides to facilitate installation or removal of modules after the tray has been mounted in an equipment rack
- A lacing bar for cable strain relief and for neatly organizing external cabling

The RT-2 is completely assembled and includes an accessory package which contains an AC power cord and rear rack supports.

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## Installation

This section provides instructions for installing the SoundPals modules and mounting the RT-2 in an equipment rack.

### Installing SoundPals modules in the RT-2

The RT-2 accepts up to three SoundPals modules in a side-by-side configuration. Modules are held in place by vertical posts that are fitted with compliant plastic sleeves. Positive retention of the modules is provided by three fixed posts at the rear of the modules and two removable keys at the front of the modules. When the modules are properly installed, the flat washers on the fixed posts and the keys at the front of the tray will engage with the slots on the sides of the modules.

To install a module in the tray:

1. Remove the thumbscrews holding the two keys in place at the front of the tray.
2. If installed, remove the four rubber feet from the bottom of the module.
3. Holding the module at a slight angle, insert it in one of the three positions in the front of the tray. Ensure that the front of the module is facing the front of the tray (so that any indicators on the module are visible from the front of the tray). Also ensure that the module is inserted into the tray in a position slightly in front of the small fixed posts with the flat washers.
4. Press the module into place, compressing the compliant plastic material on the vertical posts.
5. Repeat steps 2 through 4 to install additional modules.
6. Replace the keys removed in step 1, ensuring that they engage with the slots on the sides of the modules.
7. Attach the power cables. Note that one cable is longer than the other two. This should be attached to the left-hand (as viewed from the front of the tray) module.

## Installing the RT-2 in an Equipment Rack

The RT-2 is equipped with rack slides to facilitate installation or removal of modules after the tray has been installed in an equipment rack. Rear rack supports are provided and must be used to ensure smooth operation of the slides, as well as to ensure mounting of the tray with modules installed and external cabling attached.

1. Attach the rear support brackets (packed separately in the RT-2 accessory package) at the desired position on the rear mounting rails of the equipment rack. Be sure to select mounting holes which directly correspond to the holes in the front mounting rail where the RT-2 will be installed.
2. Place the RT-2 on a flat surface and loosen the two thumbscrews on the front of the unit.
3. Fully extend the rack slides by pushing the outer rails toward the rear of the RT-2.
4. Detach the straight aluminum bars from each of the two rack slides by removing the two Phillips head screws which hold each in place.
5. Measure the distance between the front and rear rack rails in the equipment rack where the RT-2 will be mounted.
6. Reattach the aluminum bars to the rack slides. Position them such that the distance from the front mounting ear of the rack tray to the free end of the aluminum bar is equal to the measurement in step 5, plus a minimum of ½ inch.
7. Install the tray in the equipment rack by passing the free end of the aluminum bars through the slots in the rear rack supports and attaching the front mounting ears to the front rack rail with appropriate rack-mount screws.
8. Connect all external cables and use tie wraps to secure them to the cable lacing bar at the rear of the tray. Note that any external cabling that attaches to the front of any of the SoundPals modules may be routed through the spaces between the modules.
9. Slide the tray into the rack and tighten the two thumbscrews to hold it in place.

## Installing a Second Power Supply Module

The RT-2 is equipped with a single PSU-1 power supply module. The tray is pre-wired for dual power supplies, and a second PSU-1 may be added as an option. The power distribution circuitry in the RT-2 is designed to ensure uninterrupted operation in the event that one of the two power supplies should fail. A red LED indicator on the front of the tray will illuminate to indicate that one of the supplies in the dual supply configuration has failed.

To install a second PSU-1 power supply:

1. Remove two Phillips head screws which secure the two nylon cable clamps to the posts in the rear of the tray.
2. Place the clamps on the molded strain reliefs located on the ends of the second power supply. The larger clamp should be positioned on the AC side and the smaller clamp on the output DC side.
3. Reattach the clamps to the posts, ensuring that the AC line cord is oriented toward the rear of the tray.
4. Attach the DC power connector on the second power supply to the unused connector (J5 or J6) on the small printed circuit board mounted in the rear of the RT-2. Coil the excess cable and secure with tie wraps.
5. Attach the AC power cord to a suitable AC power source.

# External Power

## About Power Supplies

A power supply conforming to the specifications listed in the following “**Power Supply Specifications**” section *must be used* to guarantee that published SoundPals performance figures are met.

## CE Compliance

For CE compliance, the power supply that you use *must comply* with the following requirements:

- Low Voltage Directive 73/23/EEC
- EMC Directive 89/336/EEC
- EMC Directive 93/68/EEC
- The connector locking ring must be tight.

## Power Supply Specifications

The following specifications must be met over all anticipated operating conditions including AC power line range, temperature range, etc.

Parameter	Specification
Output voltage	5.6V minimum (measured at trough of ripple) at 160 mA constant current. 8.6V maximum (measured at peak of ripple) at 105 mA constant current.
Ripple voltage	2V p-p at 700mA constant current. 400mV p-p at 700mA constant current with external 2200 $\mu$ F capacitor.
Connector	Switchcraft 761K with center positive, sleeve negative.

## Power Supply Sources

In addition to the GPS-supplied universal power supply, the following power supply meets the SoundPals requirements:

Company	Model	Note
Elpac	MI2007	95-250V AC, 47-63 Hz with IEC inlet (line cord required). (CE compliant).