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NILES AUDIO CORPORATION

MSA-6R

REMOTE CONTROL

SPEAKER SWITCHER/AMPLIFIER MATCHING SYSTEM
HOOKUP & OPERATING INSTRUCTIONS

INTRODUCTION

The Niles Audio MSA-6R is a remotely controllable speaker selection system for up to six rooms. In addition to the speaker selection feature, the unit enables you to turn the entire hi-fi system on or off and adjust the volume from any one of the six rooms. The most unique feature of the MSA-6R is its computer controlled matching system. The computer "knows" how many pairs of speakers are playing at any given time and it automatically selects the correct taps on the unit's built-in matching transformers. The net result is that the amplifier is always presented a nominal 8 ohm load even if all six pairs of speakers are playing at the same time.

The main system unit provides central control of all on/off functions. Three optional wall panels (the RP-1, SCW-2R, and SCW-6R) are available for remote control functions.

The RP-1 panel offers Power On/Off and Local Speakers On/Off. LED indicators show whether the main power and speakers are On or Off.

The SCW-2R offers the same features as the RP-1 with the additional feature of Local Volume Control via a stereo autoformer.

The SCW-6R is a seven-gang-wide wall panel with six stereo autoformer volume controls. This unit is designed for use in those installations where central control of the volume of all six locations is desired.

MAIN SYSTEM UNIT INSTALLATION - Refer to figure 1 for details. DO NOT APPLY POWER TO THE MSA-6R UNTIL ALL CONNECTIONS ARE COMPLETED AND VERIFIED.

Locate the MSA-6R in any convenient location. If desired, the rack mount front panel permits easy mounting in an equipment rack. If you do choose to rack mount, be sure to unscrew the rubber feet from the bottom of the unit to provide enough clearance for stacking above another component.

Be sure that there is a grounded 120 volt A.C. outlet nearby. If possible, avoid placing other pieces of equipment with power transformers above or below the MSA-6R. The power transformer in the adjacent component could potentially induce hum in the audio matching transformers of the MSA-6R.

There are two A.C. outlets on the rear right side of the MSA-6R. One of these outlets is Switched and the other is Unswitched. The Unswitched outlet is provided in case any of the hi-fi components must remain connected to the A.C. line at all times. For example, some of today's FM tuners must remain connected to an A.C. outlet in order to maintain preset station memory. Plug any of these types of components into the UNSWITCHED outlets. Plug the A.C. cords of the remaining components into the SWITCHED outlet. If there are multiple components to be connected to either of these outlets, you may need to purchase a multi-tapped A.C. strip.

CONNECTING THE AMPLIFIER - Refer to figure 1 for details.

The rear panel connectors of the MSA-6R will accommodate up to 14 gauge wire. Carefully follow the directions for connecting the wires to the orange-colored connectors. Failure to do so could result in a shorted connection.

The proper way to connect wires to the connectors is as follows:

1. Strip 1/4" of insulation (NO MORE) from each wire you intend to connect.
2. Twist the loose ends tightly together and then insert the wire into the appropriate hole in the connector block. You may wish to tin the wire ends with a soldering iron before inserting them in to the connector block.
3. With a small slotted blade screwdriver, tighten the set screw in the terminal block above each wire.

Locate one of the orange-colored 4 terminal connectors. Connect the four wires coming from the output of your **AMPLIFIER** or **RECEIVER** to this connector. The connection sequence is as follows:

Terminal #1 to Amplifier L+
Terminal #2 to Amplifier L-
Terminal #3 to Amplifier R-
Terminal #4 to Amplifier R+

After connecting the four wires to the terminal block, push the block onto the four pins corresponding to the Amplifier input on the left rear of the MSA-6R. See figure 2 for details.

CONNECTING THE SPEAKERS - Refer to figure 1 for details.

If you are using the MSA-6R as a stand alone unit or if you are using the RP-1 remote control plates, you will connect each pair of speakers directly to the MSA-6R. For each pair of speakers, locate one of the 4 terminal orange-colored connectors. As in the previous step, connect each of the 4 speaker wires to the appropriate connector hole as follows:

Terminal #1 to Speaker L+
Terminal #2 to Speaker L-
Terminal #3 to Speaker R-
Terminal #4 to Speaker R+

Again, as in the previous step, push the connector onto the four pins corresponding to the speaker pair you are connecting.

If you are using the SCW-2R remote control plates, locate a 4 terminal orange-colored connector and connect the speaker output of the MSA-6R to the volume control transformer input as follows:

Terminal #1 to volume control input (channel 2 White wire)
Terminal #2 to volume control input (channel 2 Black wire)
Terminal #3 to volume control input (channel 1 Black wire)
Terminal #4 to volume control input (channel 1 Red wire)

Use the wire nuts provided with the SCW-2R to speed up the connection.

Next, connect the output wires of the transformer volume controls to the associated speakers as follows:

Channel 2 White wire to LEFT SPEAKER +
Channel 2 Black wire to LEFT SPEAKER -
Channel 1 Black wire to RIGHT SPEAKER -
Channel 1 Red wire to RIGHT SPEAKER +

Use the wire nuts provided with the SCW-2R to speed up the connection.

CONNECTING THE REMOTE CONTROL PANELS - Refer to figure 1 for details.

Locate one of the 7 terminal orange-colored connectors for each of the remote plate you are installing.

You will need to obtain a 6-conductor shielded cable (BELDEN 9513 or equivalent) to connect the RP-1 and/or SCW-2R wall-mount plates to the MSA-6R. Though shielded cable is not absoluteley necessary, it is Strongly Recommended that you use it. If you insist on using unshielded cable, use BELDEN 9430, COLUMBIA C0211, or equivalent.

Assuming that you have already pulled these cables, connect pin 1 through pin 7 of each wall panel to pin 1 through pin 7 of the corresponding connector on the MSA-6R. **BE SURE TO ATTACH THE SHIELD OF THE MULTI-CONDUCTOR CABLE TO PIN 1 OF THE RP-1, SCW-2R, AND MSA-6R.**

OPERATION

Operation is quite straightforward. The switches on the front panel of the MSA-6R function as follows:

The Main Power On/Off switch supplies A.C. power to whatever components are connected to the SWITCHED A.C. outlet on the rear of the unit. A maximum combined load of 1500 watts can be connected to the Switched and Unswitched Outlets. Do not overload these outlets.

The All Speakers On/Off switch turns on and off all six pairs of speakers simultaneously.

Switches 1 through 6 turn on and off that corresponding pair of speakers in each location.

The RP-1 and SCW-2R control panels have 2 switches. One is labeled Main Power On/Off and the other is labeled Speaker On/Off. The Main Power On/Off switch enables you to turn the entire system's A.C. power on or off from the remote location. The Speaker On/Off switch enables you to switch on or off that room's speakers without having to go back to the main listening area to do so.

SPECIFICATIONS

Dimensions: 19" Wide X 12" Deep X 5¹/₄ High.

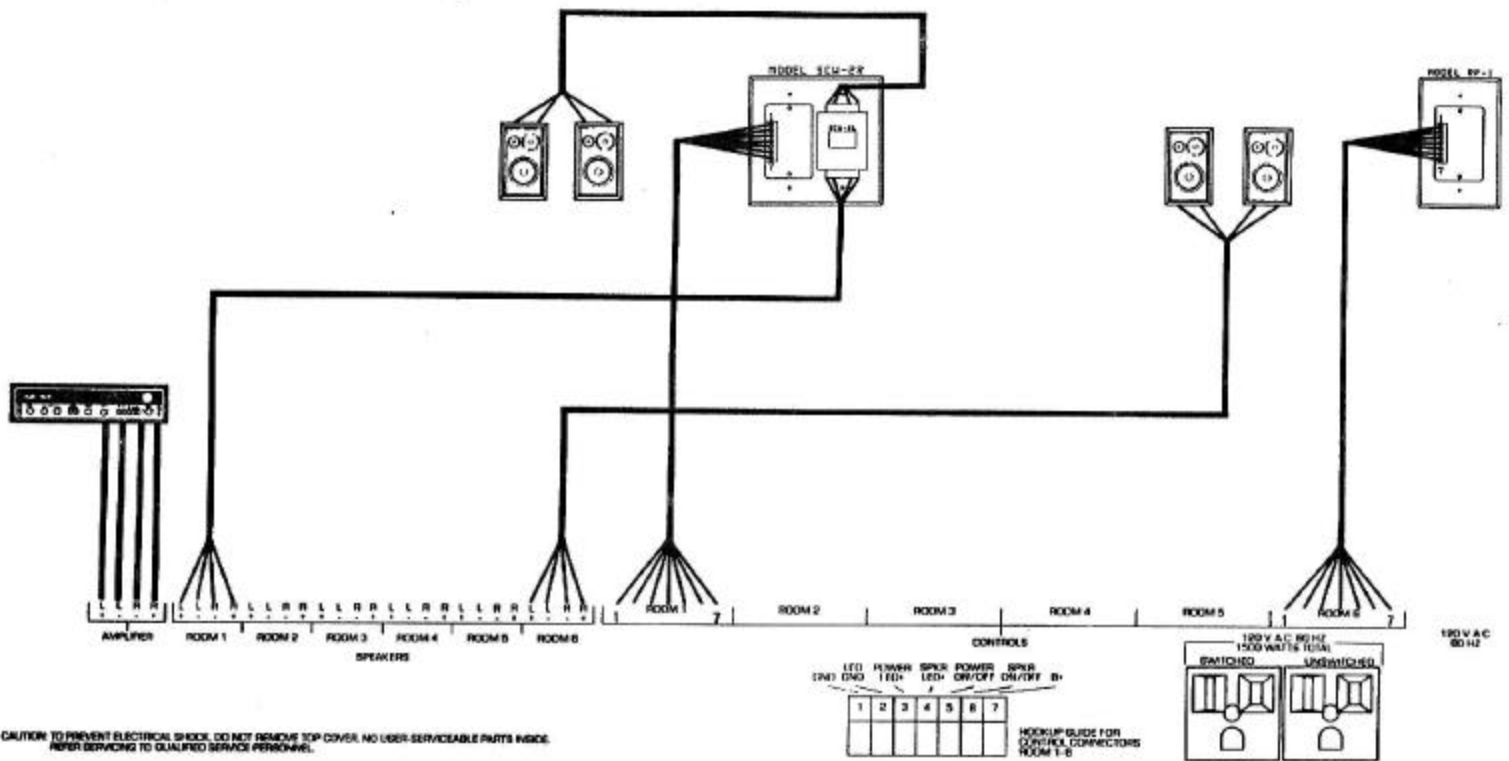
Weight: 17 pounds. (7.75 Kg).

Power Requirements: 120 VAC 60 Hz. Three wire grounded outlet.

Maximum A.C. Power Switching: 1500 watts.

Audio Power Handling Capacity: 250 watts per channel.

Maximum Wire Size Accomodated: 14 gauge.



CAUTION TO PREVENT ELECTRICAL SHOCK, DO NOT REMOVE TOP COVER. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

FIG. 1

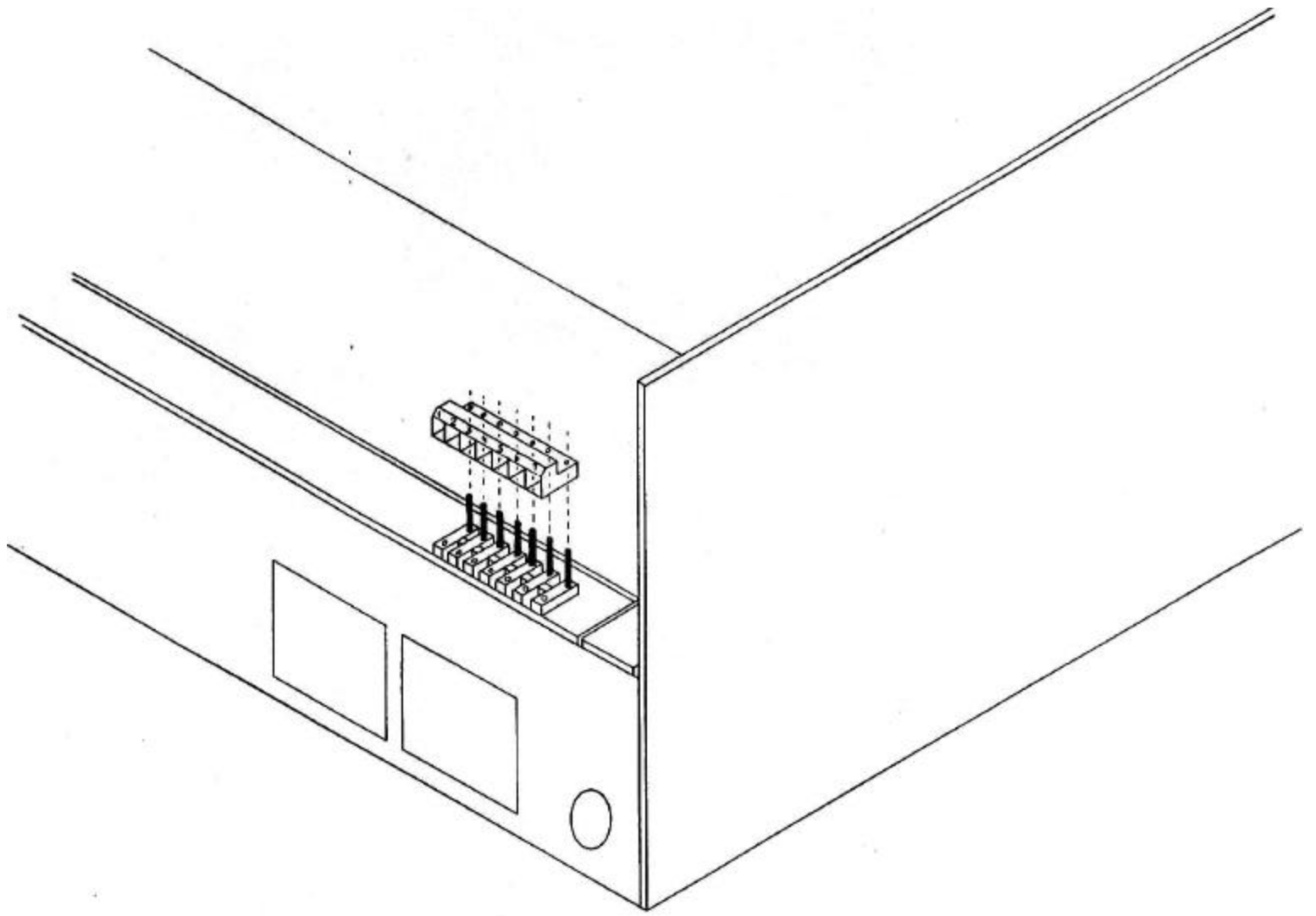


FIGURE 2

MSA-6R Remote Control Speaker Selector / Impedance Matching System

Tired of walking back to the stereo system to turn your remote speakers on? Want to turn off your hi-fi in the den without leaving your bedroom?

Then consider the **MSA-6R**, the "smart" speaker selector.

Like most speaker selectors, the **MSA-6R** lets you connect up to six pairs of speakers and play any or all of them simultaneously. But that's where the similarity ends.

Intelligent selection. Plug all of your components into the switched AC outlet of the **MSA-6R**. Now, using its front panel power switch, you can easily turn on and off the power to all of your components. Select the speakers you want to play by pressing its front panel buttons. LED status indicators show whether the AC power is on or off, and which speakers are playing.

Convenient selection. Add **RP-1** Control Panels to the **MSA-6R** and put your hi-fi's power switch where it belongs: in the rooms where the speakers are located. Locate the **RP-1** wall plates in each room and hard-wire them to the **MSA-6R**. Now, press the buttons on the **RP-1** and you'll be able to turn your hi-fi system on and activate the speakers for that room. Or vice-versa. You can turn off the speakers – or even the whole system – at the end of the evening without ever leaving your room.

Efficient selection. Conventional speaker selectors use a resistive matching system for amplifier protection, wasting up to 80% of your amplifier's power in the selector. The **MSA-6R**, with its special autoformer matching system, assures virtually all of your amplifier's power will reach the speakers instead of being wasted as heat. The built-in analog computer automatically adjusts itself, safely matching the amplifier to the number of speakers selected. This maintains a nominal 8 ohm load on the amplifier, making it safe for use with most quality amplifiers.

Wide selection. A variety of control panels are available for customizing your system. With the **RP-1** wall plate, you gain individual room control of *power on/off* and *speaker on/off* functions. The **RP-2** is a Decora® style version of the **RP-1**. With the **SCW-2R**, you get all the functions of the **RP-1** plus the added feature of a stereo volume control, all combined on a single, double-gang wall plate. Locating a **SCW-2R** in each room gives each listener an individual volume control – letting you adjust the volume in any one room without disturbing the others.

For those seeking the ultimate in control there is the ultimate control panel: the **MSA-UIR**. It combines all the features of the **SCW-2R** with an **IRR-3** Infrared Remote Sensor, all mounted on a single, three-gang wall plate. Take your hi-fi's hand-held remote into any room equipped with an **MSA-UIR**. Aim the remote at the **MSA-UIR** and you can operate the hi-fi as if you were standing right in front of it. (The **MSA-UIR** interfaces with the **IRP-6** Infrared Repeater System. The **IRP-6** and an infrared-controllable stereo system are required to perform these functions. For additional information on the **IRP-6**, please see page 23.)

LED status indicators on the **RP-1**, **SCW-2R** and **MSA-UIR** show whether your system power and local speakers are On or Off.

The optional **SCW-6R** is a seven-gang wall plate with six stereo autoformer-type volume controls. This unit enables you to individually adjust the volume of up to six pairs of speakers from one central location. (For additional information on the **SCW-6R**, please see page 19.)

The **RP-1**, **SCW-2R** and **MSA-UIR** are hard-wired to the **MSA-6R** using a six conductor shielded cable (User Supplied).*

Speakers are connected to the **MSA-6R** with a separate run of 4-conductor speaker wire up to 14 gauge.

The **RP-1**, **SCW-2R** and **MSA-UIR** are available in a choice of four decorator colors: Bone, Brass, Stainless Steel, and White. Color matched plate screws are included.

Specifications

MSA-6R

Audio Power Handling	200 watts/channel continuous (rms) 350 watts/channel peak music power
AC Power Handling	1500 watts total maximum, both outlets combined
AC Power Requirements	120v AC 60Hz, 32 watts maximum, 3-wire grounded cord
Speaker Wire Capacity	14 gauge
Overall Dimensions	19" wide x 5 3/8" high x 12 5/8" deep
Weight	18 1/2 lbs.

RP-1 — Wall-Mount Control Panel

Mounting	In-the-wall mount, requires single-gang electrical box at least 1" deep, standard style face plate
Wiring Requirements	6-conductor shielded cable connecting to MSA-6R
Power Requirements	Powered by MSA-6R
Unit Dimensions	1 3/4" wide x 2 5/8" high
Face Plate Dimensions	Standard; 2 3/4" wide x 4 1/2" high
Depth Behind Plate	3/4"

RP-2 — Wall-Mount Control Panel (Decora-style version of our RP-1)

Unit Dimensions	1 5/8" wide x 2 5/8" high
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SCW-2R — Wall-Mount Control Panel

Audio Power Handling	20 watts/channel continuous (rms) 60 watts/channel peak music power
Mounting	In-the-wall mount, requires double-gang electrical box at least 2 1/2" deep, standard style face plate
Wiring Requirements	6-conductor shielded cable and 4-conductor speaker wire connecting to MSA-6R
Power Requirements	Powered by MSA-6R
Unit Dimensions	3 1/2" wide x 2 5/8" high
Face Plate Dimensions	Standard; 4 9/16" wide x 4 1/2" high
Depth Behind Plate	2 1/2"

MSA-UIR — Wall-Mount Control Panel

Audio Power Handling	20 watts/channel continuous (rms) 60 watts/channel peak music power
Mounting	In-the-wall mount, requires three-gang electrical box at least 2 1/2" deep, standard style face plate
Wiring Requirements	6-conductor shielded cable and 4-conductor speaker wire connecting to MSA-6R, 2-conductor shielded cable to IRP-6
Power Requirements	Powered by MSA-6R, IRP-6
Unit Dimensions	5 3/8" wide x 3 5/8" high
Face Plate Dimensions	Standard; 6 3/8" wide x 4 1/2" high
Depth Behind Plate	2 1/2"

* Recommended shielded cables are WEST PENN CL2-3270, BELDEN 9513, or any equivalent 6-conductor cable which has 22 gauge (or larger) wires surrounded by a foil shield and drain wire.