

SC1

STANDARD CONTROLLER MODULE

OPERATING INSTRUCTIONS and trouble-shooting guide

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Rio Rancho, NM

INTRODUCTION

The SC1 Standard Controller module is the heart of a standard Modular Audio Processor installation. In addition to supplying all the power for other Modular Audio Processor system modules, it controls and meters system output levels.

All main modules (automatic, standard, or expansion) reside in a special slot on the far right side of a Modular Audio Processor mainframe. A printed circuit board inside the Modular Audio Processor mainframe serves as the bus for signals and power to be distributed within a Modular Audio Processor system. Most necessary connections between the main module and other modules are made by the main bus, leaving very little wiring to be done by the installer.

TABLE OF CONTENTS

INTRODUCTION	1
GENERAL TECHNICAL DESCRIPTION	2
INSTALLATION	2
FRONT PANEL DESCRIPTION	3
REAR PANEL DESCRIPTION	4
OPERATING INSTRUCTIONS	4
TROUBLESHOOTING	5
SPECIFICATIONS	5
SERVICE AND REPAIR	6
RETURNING UNITS FOR REPAIR	6
WARRANTY	Back cover

GENERAL TECHNICAL DESCRIPTION

The SC1 Standard Controller module is the "system controller" for a standard mixing system.

The power supply for the system is located in the main module. A toroidal power transformer is used in the Modular Audio Processor system, for both lower radiated and mechanical noise. The secondaries are rectified and filtered to produce +/-23 volts. The unregulated power is then distributed to each module, where it is regulated to +/-15 volts.

The Modular Audio Processor system has two central signal buses, Main and Aux, which drive rear panel balanced outputs. Both of these buses are controlled via front panel level controls. In addition, the post level control output of either bus can be monitored using the front panel LED meter. Both the Main and Aux outputs are driven by a special electronically balanced and floating high current output driver. This circuit provides most of the advantages of a transformer coupled output, and suffers none of the low frequency non-linearities of a transformer. The Main output is typically used to feed the main sound system, while the Aux output can be used as a separately controlled signal for remote sound systems or an audio feed for broadcast or recording.

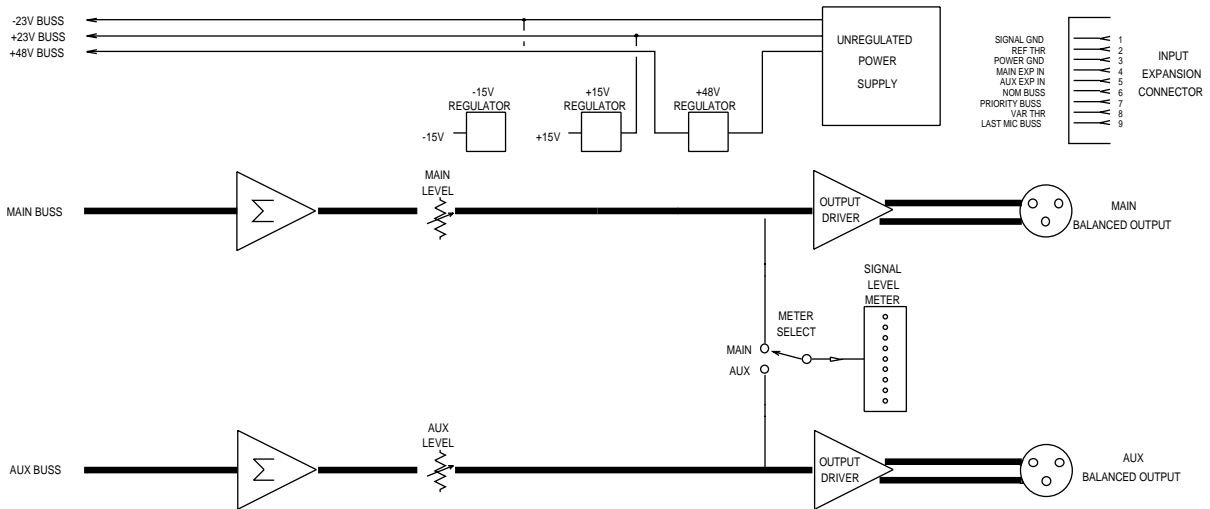


Figure 1 - SC1 Block Diagram

INSTALLATION

The SC1 Standard Controller module is installed from the rear of the Modular Audio Processor mainframe. Both the printed circuit and the transformer shield fit into their respective sets of card guides. The module is then slid forward in the mainframe until the female edge connector is seated firmly onto the male pins of the main bus board. Care should be taken when inserting the edge connector onto the pins to be sure there is correct alignment. Four #4 machine screws with captive washers are provided to secure the rear panel of the automatic main module to the top and bottom rear rails of the Modular Audio Processor mainframe. Four #4 flat head screws are provided to secure the front panel of the automatic main module to the front panel of the Modular Audio Processor mainframe. Once these eight screws are in place, the installation of this module is complete.

FRONT PANEL DESCRIPTION

POWER - Controls AC power for the module.

METER - Controls the choice of output signals to be displayed on the LED meter to the left of the switch. Both the Main and Aux signals are metered after their respective level controls.

AUX LEVEL - Controls the output level of the Aux output. The Aux output is fed from an internal bus that takes its signal before the channel output level controls. Because of this, the Aux output contains signals from all mic inputs that have mics connected to them.

MAIN LEVEL - Controls the output level of the Main output. The Main output signal is derived from an internal bus that takes its signal after the channel output level control. Thus, the Main output contains signals from only those mic channels whose channel output level controls are turned up.

OUTPUT LEVEL METER - Displays the signal level of either the Main or Aux outputs (depending on the position of the METER switch). The meter is calibrated in dBu (.775 Vrms is 0dBu). The red LED indicates power is on, but this LED extinguishes in the presence of signal. When the yellow +8 LED flashes, this indicates about 12dB of system headroom left before clipping.

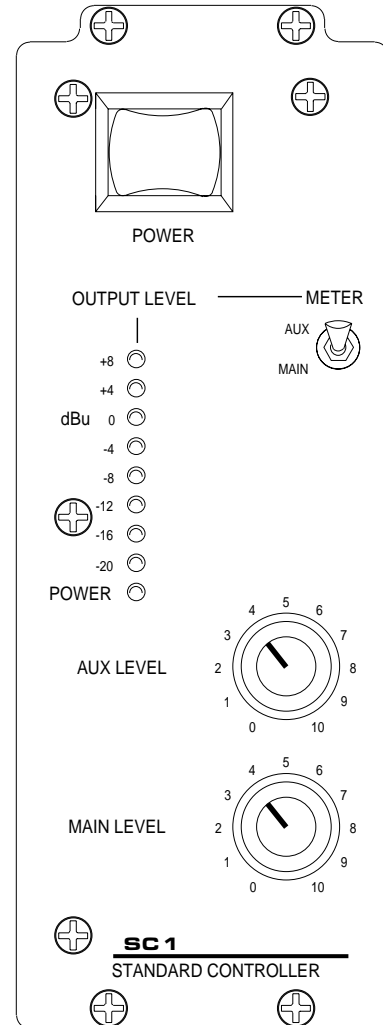


Figure 2 - SC1 Front Panel

REAR PANEL DESCRIPTION

FUSE HOLDER - Contains the AC fuse for the system. This fuse is a 3/4A Slo-Blo type, and should only be replaced by a similar type fuse.

SIGNAL GROUND SWITCH - Connects the signal to chassis ground or lets signal ground float. This feature can be helpful in tracking down and eliminating ground loops. This switch does not in any way effect the chassis connection to the third wire of the power cord: this connection is hardwired internally for safety.

AUX OUTPUT - Provides an electronically balanced and floating output signal. Output impedance is 100 ohms balanced, and 50 ohms unbalanced.

MAIN OUTPUT - Provides an electronically balanced and floating output signal. Output impedance is 100 ohms balanced, and 50 ohms unbalanced.

EXPANSION INTERFACE CONNECTOR - Provides a means of system expansion if more than one Modular Audio Processor mainframe is needed. Uses a standard male to female 9 pin subminiature D type connector.

OPERATING INSTRUCTIONS

The following instructions assume a system with standard mic preamp modules (SP4). Further, these instructions assume proper setup of the standard mic preamp module, in accordance with the instructions provided with that module.

- 1) Set the METER switch to the desired position. If under normal conditions of use the meter indication is very low, it is possible turn down the sensitivity of the power amplifier(s) driving the system and increase the Main or Aux level to give more meter indication.
- 2) Set the AUX LEVEL control to the desired level (or to "0" if the Aux output is not being used).
- 3) Set the MAIN LEVEL control to the desired level.
- 4) In the unlikely event of a ground loop, the rear panel SIGNAL GROUND switch can be used to lift signal ground from chassis ground to facilitate finding the cause of the ground loop. Normally, the signal ground should be connected to chassis ground.

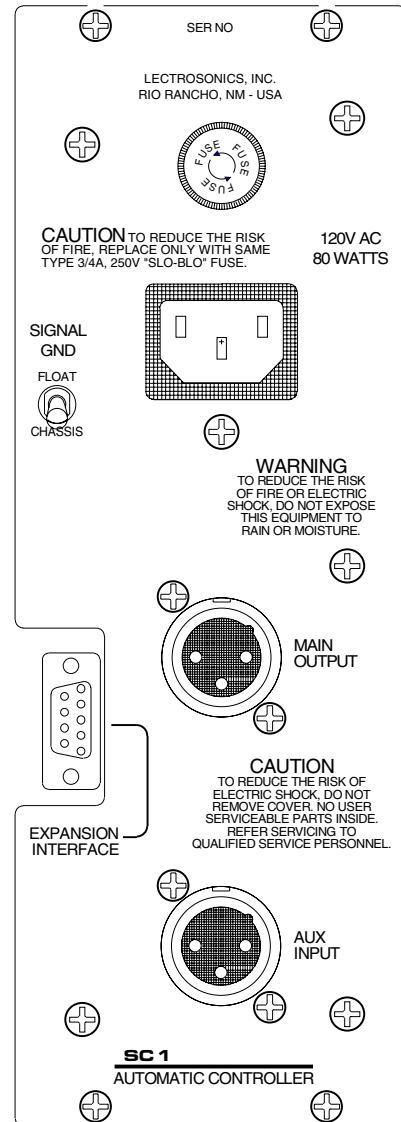


Figure 3 - SC1 Rear Panel

TROUBLESHOOTING

SYMPTOM	POSSIBLE CAUSE
1) No POWER LED	1) Power switch not on 2) Unit not plugged in
2) No sound from Main output	1) MAIN LEVEL control turned down 2) Channel level controls on mic preamps not turned up 4) INPUT TRIM controls on preamp channels too low
3) No sound from Aux output	1) AUX LEVEL control turned down 2) INPUT TRIM controls on preamp channels too low
4) No OUTPUT LEVEL meter	1) METER switch in wrong indication position 2) MAIN or AUX level controls turned down

SPECIFICATIONS

Maximum Gain:	20dB (Maximum total system gain is 75dB with preamp module)
THD @ +4dBu, 20-20KHz:	Less than .05% (Measured from Aux or Main expansion input)
IMD @ +4dBu, 60/7KHz:	Less than .05% (Measured from Aux or Main expansion input)
Noise:	
Main Output:	-100dBu with Main level at minimum -91dBu with Main level at unity gain -85dBu with Main level at unity and one channel at 40dB gain, terminated with 150 ohms
Aux Output:	-100dBu with Aux level at minimum -91dBu with Aux level at unity gain -88dBu with Aux level at unity and one channel at 40dB gain, terminated with 150 ohms
Maximum Output Level:	+20dBu for loads greater than 2K, balanced or unbalanced
Outputs:	MAIN and AUX
Type:	Electronically Balanced and Floating 3 pin male XLR,RF Filtered
Output Impedance:	100 ohms balanced 50 ohms unbalanced
Maximum Power Consumption:	.75 Amps at 120VAC, 90 Watts

SERVICE AND REPAIR

If your system malfunctions, you should attempt to correct or isolate the trouble before concluding that the equipment needs repair. Make sure you have followed the setup procedure and operating instructions. Check out the inter-connecting cords and then go through the TROUBLE SHOOTING section in the manual

We strongly recommend that you **do not** try to repair the equipment yourself and **do not** have the local repair shop attempt anything other than the simplest repair. If the repair is more complicated than a broken wire or loose connection, send the unit to the factory for repair and service. Don't attempt to adjust any controls inside the units. Once set at the factory, the various controls and trimmers do not drift with age or vibration and never require readjustment. **There are no adjustments inside that will make a malfunctioning unit start working.**

LECTROSONICS service department is equipped and staffed to quickly repair your equipment. In-warranty repairs are made at no charge in accordance with the terms of the warranty. Out of warranty repairs are charged at a modest flat rate plus parts and shipping. Since it takes almost as much time and effort to determine what is wrong as it does to make the repair, there is a charge for an exact quotation. We will be happy to quote approximate charges by phone for out of warranty repairs.

RETURNING UNITS FOR REPAIR

You will save yourself time and trouble if you will follow the steps below:

- A. DO NOT return equipment to the factory for repair without first contacting us by letter or by phone. We need to know the nature of the problem, the model number and the serial number of the equipment. We also need a phone number where you can be reached 8 am to 4 pm (Mountain Standard Time).
- B. After receiving your request, we will issue you a return authorization number (R.A.). This number will help speed your repair through our receiving and repair departments. The return authorization number must be clearly shown on the outside of the shipping container.
- C. Pack the equipment carefully and ship to us, shipping costs prepaid. If necessary, we can provide you with the proper packing materials. UPS is usually the best way to ship the units. Heavy units should be "double-boxed" for safe transport.
- D. We also strongly recommend that you insure the equipment, since we cannot be responsible for loss of or damage to equipment that you ship. Of course, we insure the equipment when we ship it back to you.

Mailing address:

Lectrosonics, Inc.
PO Box 15900
Rio Rancho, NM 87174
USA

Shipping address:

Lectrosonics, Inc.
581 Laser Rd.
Rio Rancho, NM 87124
USA

Telephones:

Regular: (505) 892-4501
WATS: (800) 821-1121
FAX: (505) 892-6243

LIMITED ONE YEAR WARRANTY

The equipment is warranted for one year from date of purchase against defects in materials or workmanship provided it was purchased from an authorized dealer. This warranty does not cover equipment which has been abused or damaged by careless handling or shipping. This warranty does not apply to used or demonstrator equipment.

Should any defect develop, we will, at our option, repair or replace any defective parts without charge for either parts or labor. If we cannot correct the defect in your equipment, we will replace it at no charge with a similar new item. We will pay for the cost of returning your merchandise to you.

This warranty applies only to items returned to us, shipping costs prepaid, within one year from the date of purchase.

This warranty gives you specific legal rights. You may have additional legal rights which vary from state to state.

LECTROSONICS, INC.

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