

RC2

REMOTE LEVEL CONTROL MODULE

OPERATING INSTRUCTIONS and trouble-shooting guide

LECTROSONICS, INC.
Rio Rancho, NM

INTRODUCTION

The RC2 Remote Level Control Module provides 2 channels of DC remote control for balanced and unbalanced line level signals. Each channel has an RF filtered differential input, a low noise, low distortion Voltage Controlled Amplifier (VCA), and an electronically balanced and floating output circuit. Common linear taper potentiometers (not included) are used as remote volume control components.

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GENERAL TECHNICAL DESCRIPTION

Each of the two inputs consists of an RF filtered differential amplifier. The input can accept both balanced and unbalanced line level signals.

A low noise, low distortion Voltage Controlled Amplifier (VCA) in each channel allows the gain of each channel to be adjusted remotely. Audio taper scaling circuitry allows the use of a common linear taper pot, while providing an audio taper for the pot rotation versus attenuation characteristic. In addition, another terminal is provided that allows remote control of the gain of both channels to be adjusted simultaneously. This input can be used in conjunction with the single channel inputs.

The output is an electronically balanced and floating high current driver. This circuit is also RF filtered, and provides many of the advantages of a transformer, without the low frequency distortion associated with transformer saturation.

INSTALLATION

The RC2 is installed from the rear of the Modular Audio Processor mainframe. Care should be taken when aligning the circuit board with the card guides. Once the module is aligned, slide the card forward in the mainframe until the female edge connector on the module seats firmly onto the male pins of the main bus board. Again, care should be taken to insure proper mating of the connectors.

Four #4 machine screws are provided with the RC2 module. Two are used to secure the rear panel to the top and bottom rails of the mainframe. After this is accomplished, fit the front panel (also supplied) over the front of the module and secure it, using the other two #4 machine screws, to the front panel of the Modular Audio Processor mainframe. Once these screws are in place, the installation is complete.

REAR PANEL DESCRIPTION

- INPUT** - Accepts balanced or unbalanced signal. Fully balanced differential input, RF filtered. XLR type connector, Pin 2 is "+", Pin 3 is "-", and Pin 1 is ground.
- OUTPUT** - Drives balanced or unbalanced loads. Fully balanced differential input, RF filtered. XLR type connector, Pin 2 is "+", Pin 3 is "-", and Pin 1 is ground.
- CW** - Provides the clockwise connection for a remote control pot. Pin 1 on the terminal strip.
- CCW** - Provides the counter-clockwise connection for a remote control pot. Pin 2 on the terminal strip.
- WIPER 1** - Provides the wiper connection for a remote control pot for Channel 1. Pin 3 on the terminal strip.
- WIPER 2** - Provides the wiper connection for a remote control pot for Channel 2. Pin 4 on the terminal strip.
- BOTH** - Provides the wiper connection for a remote pot which controls both Channel 1 and Channel 2 simultaneously. This connection may be used in addition to the Wiper 1 and Wiper 2 connections. Pin 5 on the terminal strip.

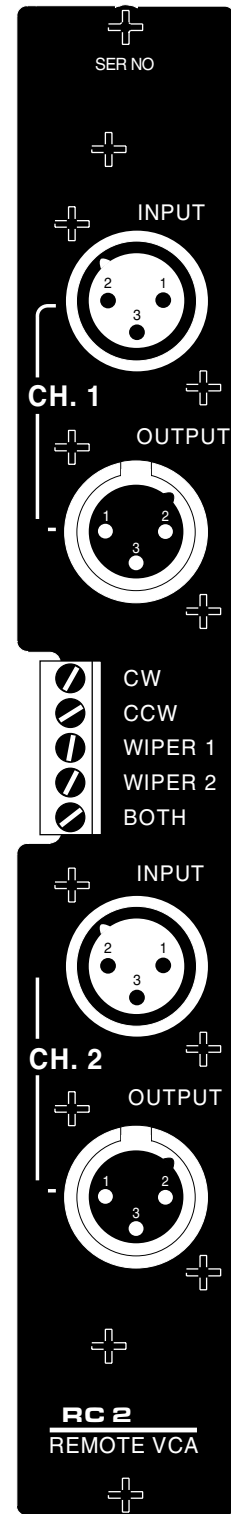


Figure 1 - RC2 Rear Panel

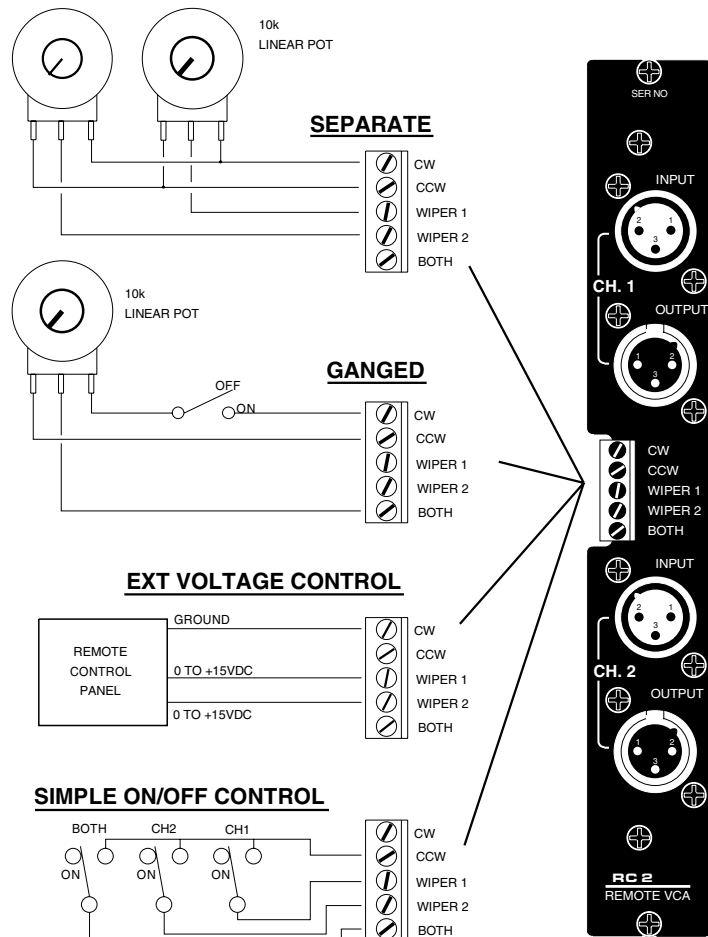
OPERATING INSTRUCTIONS

1) Remote Control - Either potentiometers or switches may be used as remote control elements for the RC2. Linear taper pots with values less than or equal to 100K ohms should be used for the remote control element. The clockwise lead of the control pots for both Channel 1, Channel 2, and the common (BOTH) control pot (if used) should be connected to the CW terminal (Pin 1) of the rear panel terminal block. The wiper lead of the Channel 1 control pot should be connected to the WIPER 1 terminal (Pin 3) of the rear panel terminal block. The wiper lead of the Channel 2 control pot should be connected to the WIPER 2 terminal (Pin 4) of the rear panel terminal block. The wiper lead of the control pot which controls **both** channels (if used) should be connected to the BOTH terminal (Pin 5) of the rear panel terminal block. The counter-clockwise lead of the control pots for Channel 1, Channel 2, and the common control pot should be connected to the CCW terminal (Pin 2) of the rear panel terminal block. Using this connection scheme, the volume will increase as the pot is rotated clockwise.

If only On/Off control is desired as opposed to volume control, a simple single pole switch can be connected between the WIPER 1 terminal and the CCW terminal to control Channel 1, the WIPER 2 terminal and the CCW terminal to control Channel 2, or the BOTH terminal and the CCW terminal to control both channels simultaneously. When the switch is **closed**, the channel will be off. When the switch is **open**, the channel is on.

There are no special requirements as to what type of wire to use to connect the RC2 to the remote pots/switches. Since there is no appreciable current flow in the control wires, small gauge wire is acceptable.

2) The RC2 has a maximum gain of unity, which means that it will **only** attenuate. Therefore, when a control pot is fully clockwise, the output level from the RC2 is identical to the input level.



TROUBLESHOOTING

SYMPTOM
No sound from system

POSSIBLE CAUSE
1) Remote control pots turned down
2) Remote control switches turned off

SPECIFICATIONS

Off Attenuation:	Greater than -75dB
Residual Noise:	Less than -80dBu
THD, 20-20KHz: (unity gain, +4dBu signal)	Less than 0.08%
IMD, 60/7KHz: (unity gain, +4dBu signal)	Less than 0.08%
Frequency Response:	10Hz-70kHz, +0,-3dB
Input:	
Impedance	20k, balanced or unbalanced
Type:	Electronically balanced RF filtered
Maximum Input Level:	+20dBu
Output:	
Type:	Electronically balanced and floating, RF filtered
Maximum Output Level:	+20dBu
Power Consumption:	±75mA at 15 Volts

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:
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FAX: (505) 892-6243

World Wide Web: <http://www.lectrosonics.com>

email: sales@lectrosonics.com

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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