

# BENCHMARK MEDIA SYSTEMS, INC.

## VCA-2 INSTALLATION GUIDE

### INTRODUCTION

The VCA-2 is a stereo Voltage Controlled Amplifier that features balanced instrumentation inputs, gain control from  $-100$  to  $+25$  dB, and balanced outputs. It is housed in a  $1/2$  wide, 1 RU chassis that is rack mountable. The VCA-2 has low THD+N of 0.003% and balanced control inputs which allows long distance control.

### Installation

#### General

A correct understanding of the proper installation is necessary to achieve the capabilities built into the VCA-2. It is important that Benchmark Media Systems, Inc. application note, "A Clean Audio Installation Guide", be read, digested, and applied as a part of the installation of VCA-2.

#### Packaging

The VCA-2 is housed in a  $1/2$  wide 1RU chassis. Two of these style chassis may be mounted in an RM-2 rack mount bracket for mounting into 19" chassis racks.

#### Power Requirements

The power requirements for the VCA-2 are a split (dual) power supply with output voltages of  $\pm 15$  volts. This supply is provided through the PS-1 power module. Current requirements are in the approximately  $\pm 75$  mA.

#### Audio Input Connections

Input connections to the VCA-2 are made using either the XLR type connectors, or plugable Euro-style barrier strip.

#### Audio Output Connections

Output is taken from either the XLR type connectors on the rear of the chassis or the plugable Euro-style barrier strip. The silk screen legend shows the pin assignments for the barrier strip. The output of the VCA-2 is balanced, but not floating. Nor is the output of the quasi-transformer type. If you intend to feed an unbalanced input you should take ONE output leg and ground to form your signal source, and leave the second output leg unattached. If you ground the second output leg, as you would do with a transformer output, sever amounts of distortion will be introduced in the circuit.

#### Control Voltage Input Connections

The VCA-2 is designed with a control voltage sensitivity of 10 dB per volt. A control voltage range of  $-10$  to  $+2$  volts will give approximately  $-90$  to  $+20$  dB of gain, with the limitation in following the control law in the  $-90$  dB area and leakage.

Control voltage inputs are made at the 9-pin D-sub connector. Control voltage is best supplied by the RGC-P, which is a small DC controller circuit that is mounted to a panel potentiometer. Power for the RGC-P is also available at the 9-pin D-sub connector at the rear of the chassis. The DC control voltage input connections should be made differentially between the output of the controller and ground at the controller output to take advantage of the differential inputs noise rejection capability.

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