Media Control Systems

SAV-1A

Operation Guide

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CHAPTER 1 INTRODUCTION

1.1 Important Notice

Like any other piece of complex equipment, the SAV-1A will perform as designed only if it is installed, used, and serviced in accordance with the manufacturer's instructions.

All individuals who have, or will have the responsibility for installing, using, and servicing the product must carefully read this manual.

The warranties made by Media Control Systems, with respect to this product are void if the equipment is not installed, operated, and maintained in accordance with the instructions in this manual. Please protect you and your employees by following these instructions.

1.2 Introduction

The SAV-1A is a self-contained, broadcast quality video / stereo audio distribution amplifier providing six independent output channels in a 1.75" x 19" rack mounting unit. The audio section provides six isolated stereo, (twelve mono) 600 ohm balanced outputs from a single stereo (dual mono) high impedance bridging input. The video section provides six independent source-terminated 75-ohm outputs from a single high impedance looping input. Outputs are independent precision integrated amplifiers for accurate balance. Gain is adjusted with front panel 25-turn potentiometers. The amplifier components have been specially chosen and the circuitry specifically designed for flat response, low distortion, maximum reliability and good long-term stability. The video amplifiers contain automatic DC offset circuitry to minimize output drift.

1.3 Operating Specifications

Operating specifications for the SAV-1A are given in Table 1-1 below.

Table 1-1. SAV-1A Specifications

Audio Section	
Inputs	0 dBm nominal, +8 dBm Maximum: transformerless 200k ohm balanced or unbalanced bridging.
Outputs	6 stereo (12 mono) 600 ohm balanced or 12 stereo (24 mono) 150 ohm unbalanced.
Gain	25 dB, continuously variable from full off.
Frequency Response	+/-0.5 dB, 10 Hz to 30 kHz.
Hum and Noise	-80 dB at 20 dBm output.
Output Isolation	Greater than 50 dB.
Distortion	0.1% or less.
Connectors	Terminal barrier strips.
Video Section	
Inputs	0.5 to 2.0 VPP, 50 k ohm, looping.
Outputs	Six, source terminated in 75 ohms, 3 VPP maximum output.
Frequency Response	+/-0.1 dB to 5 MHz: +/-0.2dB to 10 MHz.
Differential Gain	Less than 0.1%, 10 to 90 APL.
Differential Phase	Less than 0.1%, 10 to 90 APL.
Tilt	Less than 1% (DC coupled)
Hum and Noise	60 dB below 1VPP output.
Output Isolation	Greater than 45 dB at 3.58 MHz.
Connectors	BNC

CHAPTER 2 INSTALLATION

This section provides instructions on unpacking the equipment, mounting it and making electrical connections, including those for power, audio signals, and control or interface cables.

2.1 Unpacking the Equipment

Examine the shipping containers for signs of damage that may have occurred in transit. Carefully remove the unit from its shipping container to avoid damaging sensitive electronic components. To prevent discarding usable or valuable items inadvertently, search through all the packing material and the inside of each container. Verify the total number of containers received and the contents of each container with the packing slips attached to each container.

2.2 Initial Inspection

Carefully inspect the unit and all accessories for damage. If damage to the equipment or a shortage in the shipment is noted, notify the carrier promptly. Make the proper claim with the carrier and contact Media Control Systems at (619) 599-1050 immediately.

2.3 Mounting the Equipment

The system requires a minimum of 1.75 vertical inches of space in a standard 19-inch E.I.A. equipment rack. Media Control Systems recommends however, leaving a 1.75 inch space between the SAV-1A and any adjacent rack frames, top and bottom, to ensure optimum air flow for maximum component longevity.

When units are stacked together in the same rack, a single 1.75 inch space is acceptable. Color-coordinated blank panels to fill these areas are available from the factory for a nominal cost. Rack mounting hardware and spade lugs for customer supplied inputs are included with the system.

2.4 Electrical Power Connection

The SAV-1A requires a single 3-prong 120 VAC, 60 Hz grounded receptacle within six feet of its mounting location.

2.5 Video Connections

Input to the unit should be composite video at a level of 1 VPP. Since the input to each amplifier system is high (47K ohm) impedance, the input signal may be looped through the unit and terminated at another piece of equipment or looped through more than one amplifier to provide additional outputs. If the input source is NOT looped through the secondary or looping input, the connector MUST be terminated in 75 ohms. (see Figure 2.1)
Any or all of the six independent outputs of each amplifier system may be used. Each output must be individually terminated in 75 ohms at its destination to insure proper video level. Since each output is totally independent, unused outputs need not be terminated.

Figure 2.1

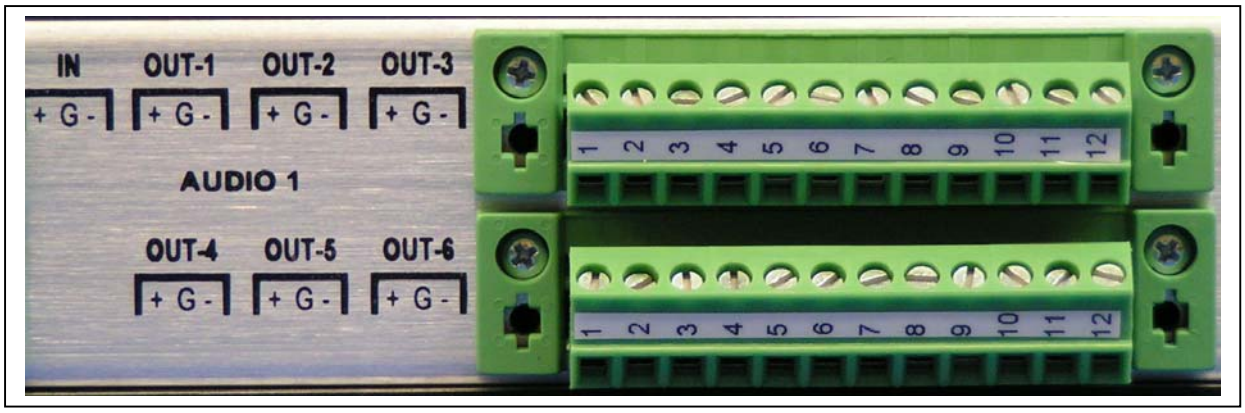
2.6 Audio Connections

If the audio input is balanced, connect the + audio to the terminal labeled Audio In +, the – audio to the terminal labeled Audio In -, and the shield to the terminal labeled Audio in G.
If the audio input is unbalanced, connect the audio lead to Audio In +, and the shield to Audio In G. If audio is connected to either the + or- input, and the shield to G, only half the available amplifier will be used, and gain will be cut by 50%.
The input circuit presents a 200K ohm impedance to input signals, and will therefore operate quite well with most high impedance audio sources. To avoid mismatching low impedance inputs, external loading resistors should be added between Audio In "+" and "G" and between Audio In "-" and "G". If an unbalanced input is being used, a single terminating resistor should be added between Audio In "+" and Audio In "-". The value of the resistor should closely match the output impedance of the device inputting the SAV-1A.

Audio outputs are grouped onto pluggable terminal blocks and divided into individual blocks representing each output. Each individual output circuit consists of a "+", "G", and "-" terminal, in that order reading from left to right. (see figure 2.2)

To obtain a 600 ohm balance audio output, make sure to connect the "+" and "-" audio leads to the same output circuit. If an output is obtained from two different output circuits, low level or distorted audio may result. 150 ohm, unbalanced audio may be obtained from 12 different sources on each amplifier. Each of the six output circuits provides 150 ohm unbalanced audio between "+" and "G" and between "-" and "G". Note that the "+" and "-" outputs from each circuit are 180 degrees out of phase.

Figure 2.2



CHAPTER 3: OPERATION AND MAINTENANCE

3.1 Operation

Once all input and output connections have been completed, the SAV-1A may be connected to an AC power source. When AC power is applied, the front panel POWER indicator should illuminate.

Each group of six output amplifiers is provided with input and output test points on the front panel. A high impedance oscilloscope probe inserted into these test points will give an accurate reading of existing audio and video levels. Each amplifier is factory set to unity (1:1) gain, but may be adjusted as needed to provide proper output level. Adjust these potentiometers varies the gain of all six output circuits identically. To adjust the input amplifier gain, insert a jeweler's type screwdriver, or straight slot tuning tool, into the front panel opening labeled video level (see figure 3.1): turn clockwise to increase the level at the outputs, counter clockwise to decrease the level. The video outputs should be adjusted to 1 VPP. If the audio outputs are set above +22dBm, clipping of the audio signal may occur. Front panel mounted test points are provided for each amplifier to facilitate easy comparison of input and output waveforms.

Figure 3.1

3.2 Maintenance

Although a ½ amp fuse is mounted on the printed circuit board, no other user replaceable parts are inside the SAV-1A. If operational difficulty is encountered, check the AC power to the unit and all input and output connections for integrity. If the unit still fails to operate, contact Media Control Systems customer service at (619) 599-1050 between 8 a.m. and 5 p.m. (PST), Monday through Friday.

If you need to return your SAV-1A for repair:

1. Save all the packing material. Be sure to send the SAV-1A back in its original packing material or in a similar durable container surrounded by two or three inches of shock-absorbing material. If you use inadequate packing, you may have to pay for shipping damages. The carrier is not responsible for claims on incorrectly packaged equipment.
2. Call Media Control Systems at (619) 599-1050 and ask for a Return Merchandise Authorization (RMA).

Limited Warranty

MEDIA CONTROL SYSTEMS, LLC, Warrants each new product manufactured by it to be free of defective materials and workmanship, and agrees to remedy any such defect by repair or replacement at no extra charge for a period of one (1) year from the original date of purchase.

This warranty does not extend to any MCS product subject to misuse, neglect, accident, improper wiring or installation, or used in violation of MCS instructions. Nor does it extend to equipment that has been altered outside MCS's factory without prior written approval, nor to equipment that has had the serial number removed, nor to accessories used herewith, which were not manufactured by MCS. Fuses and batteries are specifically excluded from this Warranty. Equipment sold by but not manufactured by MCS is warranted by the original equipment manufacturer.

The owner must deliver equipment covered by this warranty with all transportation charges prepaid, to the MCS factory for examination. If examination discloses, by MCS's judgement, that this is thus defective, the equipment will be repaired or replaced at no charge. Equipment returned prepaid under warranty and repaired in MCS's factory will be returned with all transportation charges, surface freight only, paid by MCS. Units that fail under conditions cited above, as being outside of the warranty extension will be repaired on a time-and-material basis after notification to and approval by owner. All freight incurred in repairing equipment not under warranty will be the responsibility of the owner.

In respect to any and all equipment furnished by MCS, this warranty is in lieu of any other warranty, obligation, or liability expressed or implied including warranty of merchantability or fitness for a particular purpose. No person, including a company representative, is authorized to assume for MCS any other liability in connection with the sale of its products.

Under no circumstances shall MCS be liable in contracts or in tort for any economic loss, including any loss of profits, or for any special or consequential damage.

All inquires relating to either product operation or warranty service should be directed to:

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