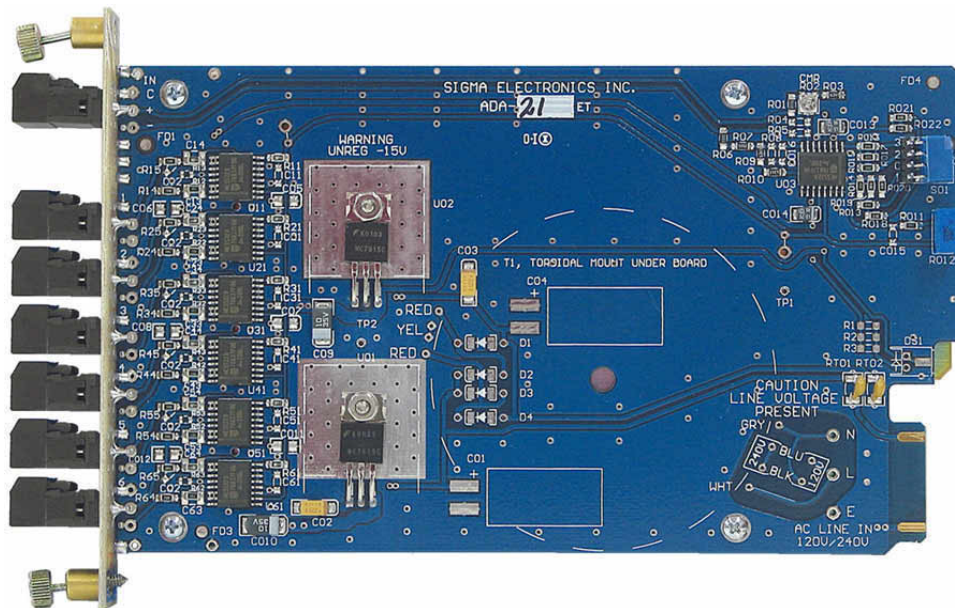


## ADA-21

### AUDIO DISTRIBUTION AMPLIFIER INSTRUCTION MANUAL



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# ADA-21 AUDIO DISTRIBUTION AMPLIFIER

## GENERAL:

The ADA-21 Audio Distribution Amplifier is designed to provide six (6) outputs from a single audio signal source. The module is compatible with either balanced or unbalanced audio signals on the input and outputs. Outputs can be mixed between balanced and unbalanced configuration dependent on the requirement of the destination equipment.

This module must be installed in a Sigma Frame for proper operation. Power is provided by the power supply within the frame. A Sigma frame is designed to accommodate any 2100 Series module. This allows the ADA-21 to be resident with any other Sigma 2100 Series module in a common frame.

## POWER:

The ADA-21 operates from bus voltages of unregulated +20Vdc and -20Vdc. These voltages are supplied by the Sigma frame / power supply. The module regulates the bus voltage to +15Vdc and -15Vdc. Circuit protection is provided by PTC Thermistors (Positive Temperature Coefficient Thermal Resistor) which serve as a permanent fuse. Upon correction of the fault, the PTC Thermistor will reset.

## FRAMES:

The ADA-21 module can reside in any of four different frames or Stand-Alone box provided by Sigma Electronics, Inc. If this module is purchased as a component of a system, please refer to the SERIES 2100 FRAMES Instruction Manual. If the module was purchased separately, an existing frame must be present for proper operation. Sigma would like to emphasize the fact that any of the Series 2100 modules can be mixed in any frame.

- ◆ When assembled in a stand-alone box, it is assigned the model number ADA-26A. This is a desk top box.
- ◆ The SS-2100-2 frame is also designed for desk top applications. This frame provides two (2) slots for dual module configurations; i.e. stereo audio.
- ◆ The SS-2100-6 frame is designed for 19 inch EIA rack installations. It provides six (6) slots for modules in 1 rack unit of space.
- ◆ The SS-2100-12+ frame provides twelve (13) slots for modules within 3 RU. Redundant power supplies are provided within this frame.
- ◆ The SS-2100-16+ frame is also available for installations in a 19 inch EIA rack. This frame provides sixteen (17) slots for modules within 3 RU.

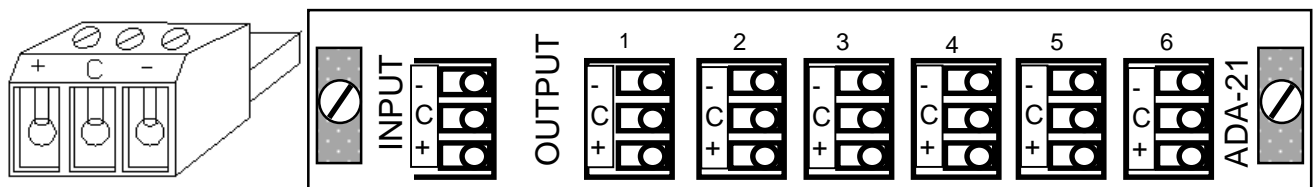
Additional information on the various frames is available. Please refer to the special section on frames if this was purchased as a complete system. If this information is not provided with this shipment, contact Sigma Electronics for assistance.

## CONNECTIONS:

Wiring to the module is performed via detachable screw terminal connectors (Figure 1).

**INPUT:** There is a single input on the rear panel of the unit (Figure 2). The INPUT is a high impedance configuration. This allows the audio signals to bridge to other units. To ensure proper impedance matching it may be necessary to terminate the outputs with a 600Ω load. It is recommended that, if termination is necessary, use a 600Ω, 1/2 watt resistor across the (+) and (-) outputs. When multiple units have inputs bridged to the same source, only apply the 600Ω resistor to the last unit in the line.

**OUTPUT:** There are six (6) outputs on the rear panel of the unit. Each output is designed to drive a 600Ω load.

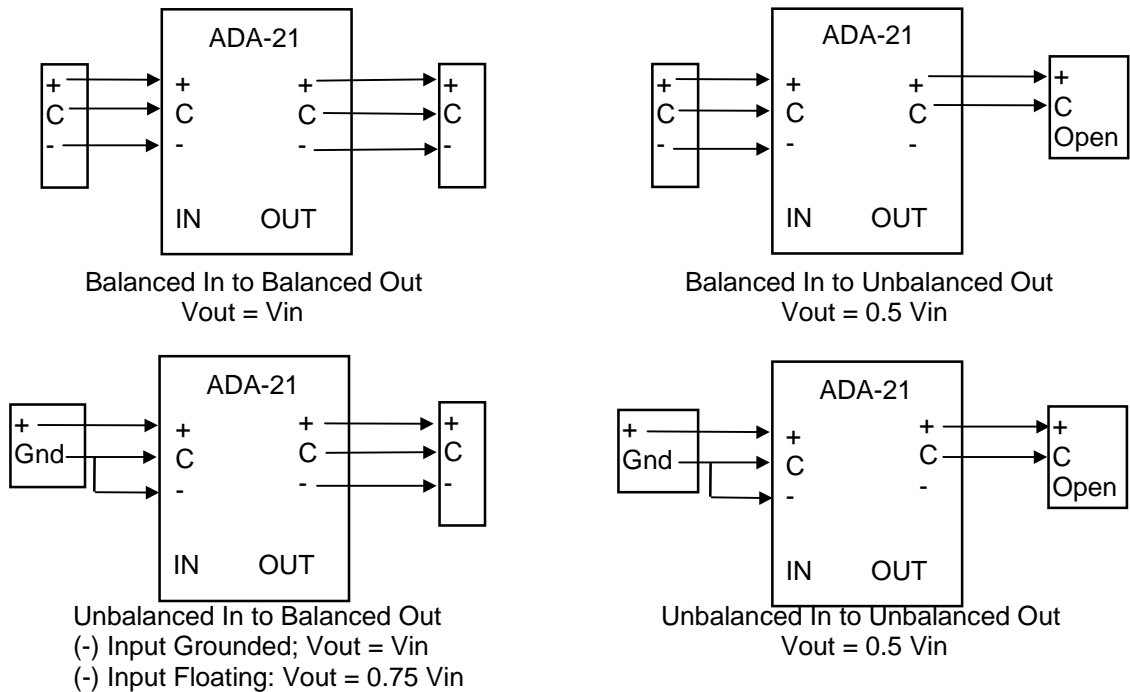


AUDIO CONNECTOR  
Figure 1

REAR PANEL CONNECTIONS  
Figure 2

## AUDIO CONFIGURATIONS:

The source and destination audio equipment must be evaluated to determine if they are Balanced or Unbalanced. After determination is made, refer to the drawings provided to select the proper audio configuration. The outputs can be any combination of balanced or unbalanced.



The input to output level comparison provided in the figures above, assumes the outputs are terminated into a  $600\Omega$  load.

## FRONT PANEL:

The adjustments and indicators on the front panel (Figure 3) can be accessed through the slots provided in the frame in which the ADA-21 is installed. When mounted within the SS-2100 Series frames, it will be necessary to remove the front panel of the frame to gain access to these items. Factory settings of the module provide unity gain, maximum common mode rejection, and a bandwidth of 100 kHz.

Gain control is achieved by adjustments to S01 and R102. S01 provides adjustment of the gain in increments of 6dB, while R102 provides fine adjustments of  $\pm 3$ dB. The positions of S01 make the following adjustments to the gain level of the circuit - ● = OFF, 1 = -6dB, 2 = 0dB, 3 = +6dB, 4 = +12dB, 5 = +18dB and 6 = +24dB.

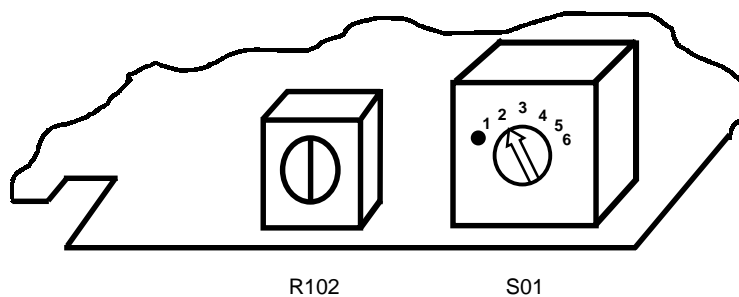


Figure 3: Front Panel Gain Adjustment

# ADA-21 AUDIO DISTRIBUTION AMPLIFIER

## ADJUSTMENTS:

Common Mode Rejection and Gain are both set for optimum performance by Sigma Electronics.

## SPECIFICATIONS:

INPUT: ..... Balanced, +24 dBm Maximum  
INPUT IMPEDANCE: ..... 30 k $\Omega$  Balanced, 15 k $\Omega$  each line to ground  
OUTPUT: ..... +24 dBm Maximum  
OUTPUT IMPEDANCE: ..... 150 $\Omega$  Balanced  
ISOLATION: ..... 70 dB Minimum (15 kHz)  
HUM and NOISE: ..... -90 dBm at Unity Gain  
THD+N..... 0.005% 20 Hz to 20kHz (30kHz LPF)  
GAIN RANGE: ..... -9 to +27 dB  
CMR: ..... 70 dB Minimum (20 Hz to 10 kHz)  
60 dB Minimum (10 kHz to 20 kHz)  
RESPONSE: ..... +/- 0.2 dB Maximum to 100 kHz at Unity Gain

## TECHNICAL MANUAL:

A manual including schematics, circuit description, parts list and setup guide is available upon request. This information is intended for the service of the module. Modules should be serviced by Qualified Personnel only. Sigma Electronics, Inc. recommends service to be performed by our Factory Service Center.

All specifications, drawings, dimensions, weights and other details are subject to change without notification. Information is intended to give a general performance and operation guideline of the product.

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ADA-21