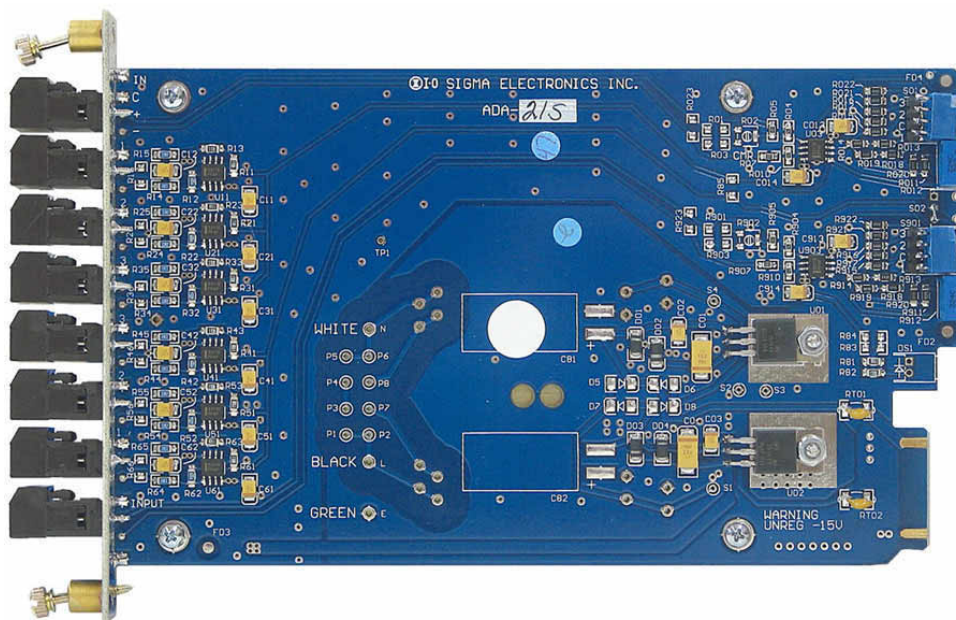


ADA-21S

STEREO AUDIO DISTRIBUTION AMPLIFIER INSTRUCTION MANUAL



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ADA-21S STEREO AUDIO DISTRIBUTION AMPLIFIER

GENERAL:

The ADA-21S Stereo Audio Distribution Amplifier is designed to provide three (3) dual-channel outputs from a stereo 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-21S to be resident with any other Sigma 2100 Series module in a common frame.

POWER:

The ADA-21S 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-21S module can reside in any of four different frames 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.

- ◆ 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 thirteen (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 seventeen (17) slots for modules within 3 RU.

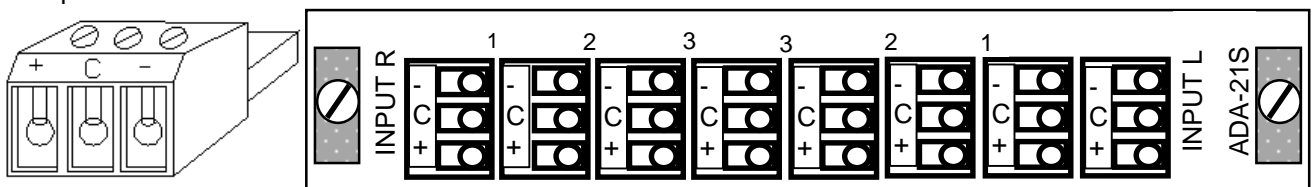
Additional information on the various frames is available. Please refer to the special section on frames if this was purchased as a complete system. If this information is not provided with this shipment, contact Sigma Electronics for assistance.

CONNECTIONS:

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

INPUT: There are dual-channel inputs on the rear panel of the unit; the first and last connectors (Figure 2). The Right channel is on the left (or top if mounted vertically) and the Left channel is on the right as seen from the rear of the unit. Both inputs are a high impedance configuration. This allows the audio signals to be bridged 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 three (3) outputs on the rear panel of the unit for each channel. Each output is designed to drive a 600Ω load. Since each output on a channel is identical, the numbering is only provided for the operator's convenience.



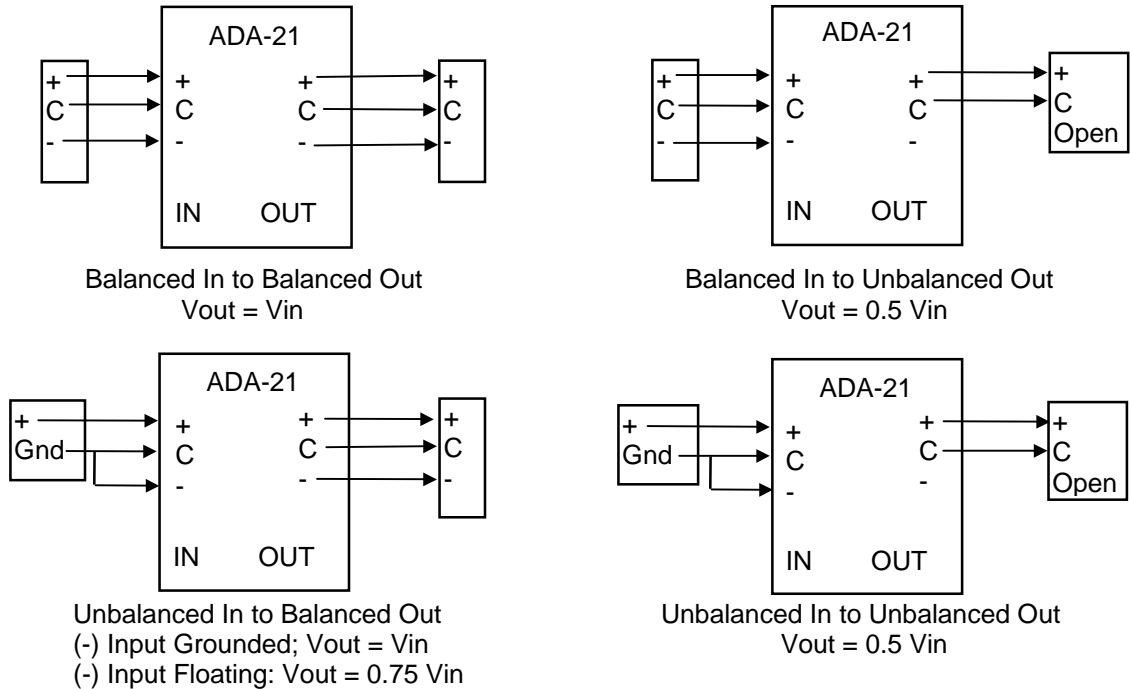
AUDIO CONNECTOR
Figure 1

REAR PANEL CONNECTIONS
Figure 2

ADA-21S STEREO AUDIO DISTRIBUTION AMPLIFIER

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 600Ω 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-21S 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 when terminated in 600Ω , and a bandwidth of 30 KHz.

Gain control for the right channel is achieved by adjustments to S01 and R012. Gain control for the left channel is achieved by adjustments to S901 and R912. S01 and S901 provide gain adjustment in increments of 6dB, while R012 and R912 provide fine adjustments of ± 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.

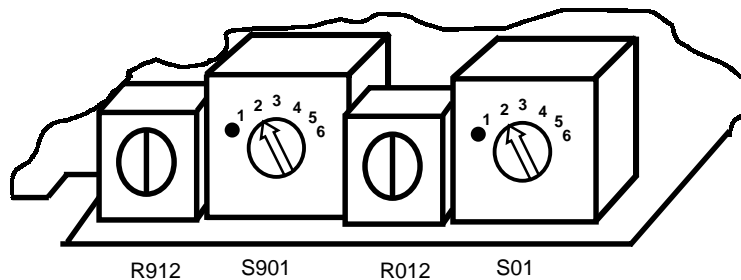


Figure 3: Front Panel Gain Adjustment

ADA-21S STEREO AUDIO DISTRIBUTION AMPLIFIER

ADJUSTMENTS:

The ADA-21S has no adjustments other than the front panel gain control.

SPECIFICATIONS:

INPUT: Dual channel, Balanced, +24 dBm Maximum
INPUT IMPEDANCE: 30 k Ω Balanced, DC coupled
OUTPUT: +24 dBm Maximum
OUTPUT IMPEDANCE: 100 Ω Balanced, DC coupled
LEFT/RIGHT SEPARATION: All outputs driven into 600 Ω , unused input terminated.
..... Greater than 80 dB, 20 Hz to 20 KHz
HUM and NOISE: less than -80 dBm at Unity Gain, 22Hz to 22Khz filter
..... less than -65 dBm at +27 dB Gain, 22Hz to 22Khz filter
THD+N: Into 600 Ω , 22Hz to 22Khz filter, 0dBm to +24 dBm
..... less than 0.05% 20 Hz to 20KHz)
IND (SMPTE 4:1 60Hz/7KHz): same conditions as THD+N, less than 0.02%
GAIN RANGE: (-6) to +24 dB in 6dB steps, \pm 3dB vernier when terminated into 600 Ω .
GAIN VARIATION: \pm 0.3 dB
CMR: Greater than 70 dB at 60 Hz, 60 dB at 20 KHz
..... 0dBm to +24dBm
RESPONSE: Into 600 Ω , \pm 0.2 dB, 20 Hz to 30 KHz

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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