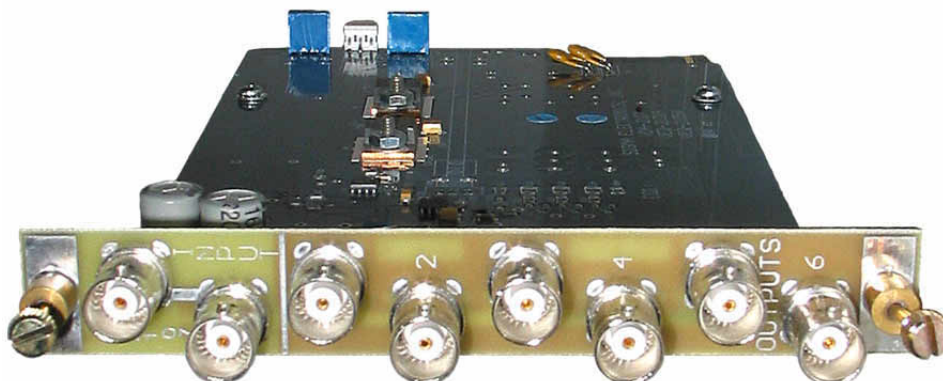


## VDA-2107

WIDEBAND VIDEO  
DISTRIBUTION AMPLIFIER

INSTRUCTION MANUAL



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# VDA-2107 VIDEO DISTRIBUTION AMPLIFIER

## GENERAL:

The VDA-2107 Video Distribution Amplifier is designed to provide six (6) outputs from a single NTSC or PAL video source. The 175 MHz bandwidth of the VDA-2107 makes it compatible with HDTV applications. The input is compatible with 1 Vp-p video and 2 Vp-p Subcarrier signals. The VDA-2107 is a module which requires a mounting frame.

The differential input enhances common mode noise rejection and sets this unit apart from general purpose video distribution amplifiers. This model will allow rejection of common mode noise induced when the site has equipment which generates noise fields into the transmission path. It is always best to keep the transmission cable lengths as short as possible. When signal quality becomes a problem due to cable length, an equalization distribution amplifier will be required.

For applications needing more than six outputs, the distribution amplifier can be arranged into a looping configuration. The looping input signal from the primary distribution amplifier is used to feed the input of a secondary distribution amplifier or a group of secondary amplifiers dependent upon how many outputs are required. Additionally, the final amplifier in the series must have the looping input terminated into a 75Ω impedance.

## POWER:

The VDA-2107 operates from bus voltages of unregulated +20 VDC and -20 VDC. The module has two regulators U5 (+5 VDC) and U6 (-5 VDC). These voltages are supplied by the Sigma frame / power supply to the VDA-2107.

## FRAMES:

The VDA-2107 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 combined in a common 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. dual video distribution amplifiers for applications which require greater than six outputs.
- ◆ The SS-2100-6 frame is designed for 19 inch EIA rack installations. It provides six (6) slots for modules in 1 RU.
- ◆ The SS-2100-12plus frame provides thirteen (13) slots for modules within 3 RU. Redundant power supplies are provided within this frame.
- ◆ The SS-2100-16plus frame is also available for installations in a 19 inch EIA rack. This frame provides seventeen (17) slots for modules within 3 RU.

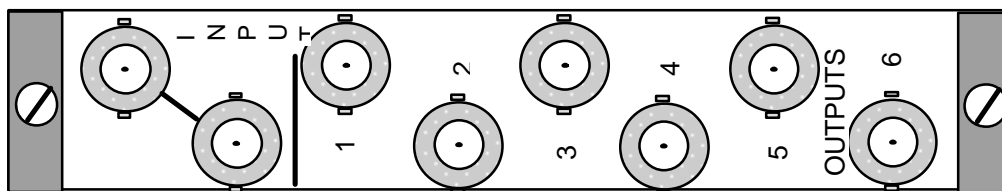
Additional information on the various frames is available. Please refer to the special section on frames. If this information is not provided with this shipment, contact Sigma Electronics for assistance.

## CONNECTIONS:

Wiring to the module is performed via BNC connectors on the rear panel (Figure 1).

**INPUT:** There is an isolated input on the rear panel of the unit. These input BNC shields are not connected to ground as are the output BNC's. The INPUT is looping.

**OUTPUT:** There are six (6) outputs on the rear panel of each unit. Each output is designed to drive a 75Ω load. It is recommended that, in high bandwidth applications, unused outputs be terminated.



REAR PANEL CONNECTIONS  
Figure 1

# VDA-2107 VIDEO DISTRIBUTION AMPLIFIER

## FRONT PANEL:

The gain and DC offset adjustments (Figure 2) are located on the front of the module. When mounted within the SS-2100 Series frames, it will be necessary to remove the front panel of the frame to access these adjustments. Factory setting of the module provides unity gain and maximized frequency response.

The variable gain control (R13) provides adjustment of at least  $\pm 2$  dB.

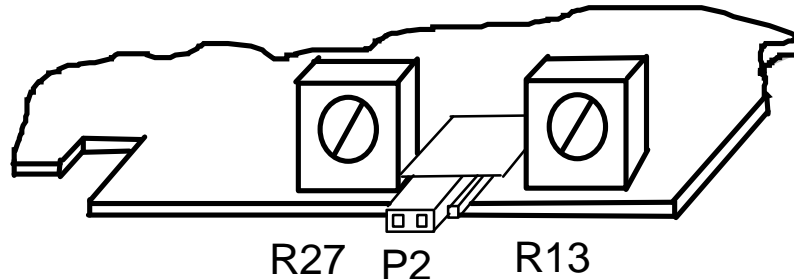


Figure 2: Front Panel

## ADJUSTMENTS:

Adjustments are set for optimum performance by Sigma Electronics. If necessary, these parameters may be readjusted via the controls listed below. Adjustments to unlisted controls should be performed by factory technicians only.

- C8: ..... Frequency response. Optimized by factory setup.
- P2: ..... Coupling Method, AC (left position) or STC (Sync-Tip Clamped right position)
- R27: ..... Offset, Front panel access. Output DC Level adjustment.
- R13: ..... Gain, Front panel access. Factory adjusted for unity gain.
- R10: ..... Common Mode Rejection, Optimized by factory setup.

## SPECIFICATIONS:

### INPUT:

- INPUT: ..... 1, Hi-Z, Looping, Differential
- INPUT LEVEL: ..... 1.4 Vp-p video maximum, 2.0 Vp-p Subcarrier maximum
- COUPLING: ..... AC or Sync Tip Clamped
- RETURN LOSS: ..... 30 dB minimum at 100MHz
- GAIN RANGE: .....  $\pm 2$  dB

### OUTPUT:

- OUTPUT: ..... 6, 75 $\Omega$ , source terminated
- BANDWIDTH: ..... 175 MHz minimum (-3dB)
- DIFFERENTIAL PHASE: ..... 0.15° 10 to 90 % APL, 4.43 MHz
- DIFFERENTIAL GAIN: ..... 0.15% 10 to 90 % APL, 4.43 MHz
- TILT, Field and Line: ..... 1% Maximum
- FREQUENCY RESPONSE: .....  $\pm 0.20$  dB maximum, 0.1 to 100 MHz
- GROUP DELAY: ..... 3 nsec maximum to 20 MHz
- ELECTRICAL LENGTH: ..... 15 nsec nominal
- RETURN LOSS: ..... 35 dB to 100 MHz

### GENERAL:

- OPERATIONAL TEMPERATURE: .. +32° TO +122° F (0° to 50° C)
- SIZE: ..... 1 Card Slot, occupies one position in a Sigma 2100 Series frame
- CONNECTORS: ..... BNC

## VDA-2107 VIDEO DISTRIBUTION AMPLIFIER

### TECHNICAL MANUAL:

A manual including schematics and service information 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 be performed by our Factory Service Center.

### NOTES:

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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REV1 APR01 (REV.E PCB)

VDA-2107