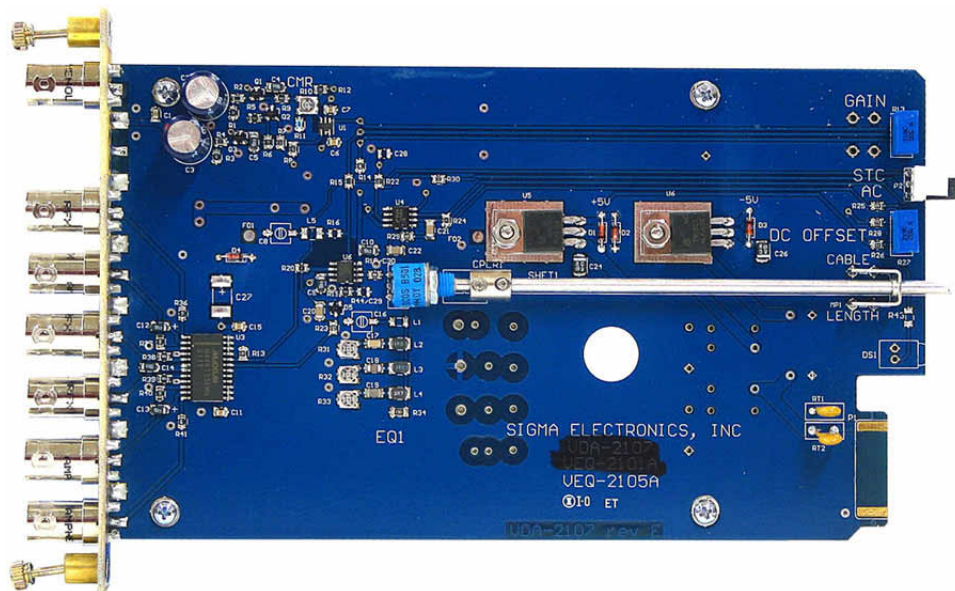


## VEQ-2105A

EQUALIZING VIDEO  
DISTRIBUTION AMPLIFIER

INSTRUCTION MANUAL



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# VEQ-2105A EQUALIZING DISTRIBUTION AMPLIFIER

## GENERAL:

The VEQ-2105A Equalizing Video Distribution Amplifiers are designed to provide six (6) outputs from a single NTSC or PAL video source. The 12 MHz bandwidth of the VEQ-2105A makes it compatible with all baseband video applications. The input is compatible with 1 Vp-p video and 2 Vp-p Subcarrier signals. The VEQ-2105A 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. Where long cable runs are necessary, the equalization provided by this distribution amplifier will compensate for the inherent distortion.

For applications in need of more than six outputs, any output of this distribution amplifier can be connected to the input of a secondary distribution amplifier or a group of secondary amplifiers dependent upon how many outputs are required.

## POWER:

The VEQ-2105A operates from bus voltages of unregulated +20 VDC and -20 VDC. The module has two regulators U5 (+12 VDC) and U6 (-12 VDC). These voltages are supplied by the Sigma frame / power supply to the VEQ-2105A.

## FRAMES:

The VEQ-2105A 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-2100-12 frame provides twelve (12) 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 (16) slots for modules within 3 RU.

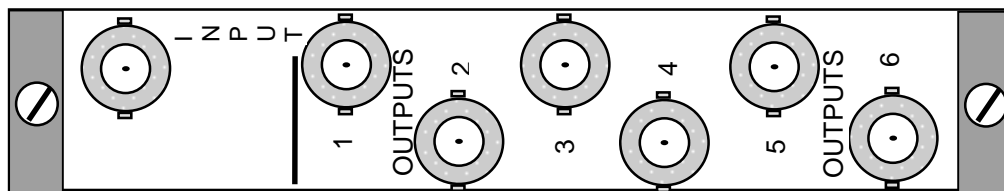
Additional information on the various frames is available. Please refer to the special section on frames. If this information is not provided with this shipment, contact Sigma Electronics for assistance.

## 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. This input BNC shield is not connected to ground as are the output BNC's. The INPUT is terminated into 75Ω.

**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

# VEQ-2105A VIDEO DISTRIBUTION AMPLIFIER

## FRONT PANEL:

The gain and DC offset adjustments are accessible from the front of the unit. 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 +4, -2 dB.

The cable length adjustment (R35) will compensate for up to 1100 feet of 8241F cable or 1500 feet of 8281 cable.

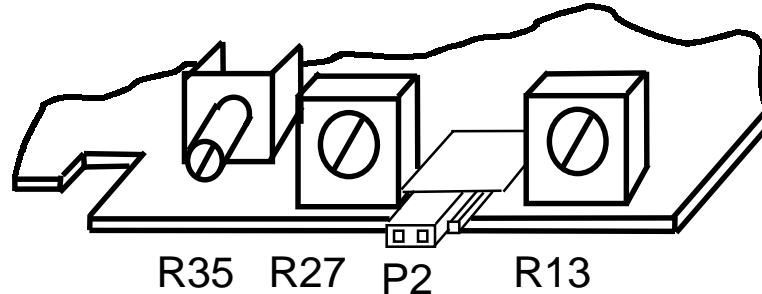


Figure 2: Front Panel

## ADJUSTMENTS:

Adjustments are set for optimum performance by Sigma Electronics. However, these parameters may be readjusted via the controls listed below.

P2: .....Coupling Method, AC (left position) or STC (Sync Tip Clamped right position)

R35: .....Cable Length Adjustment. Factory adjusted for minimum cable length.

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, Terminating, Differential  
INPUT LEVEL: ..... 1.4 Vp-p video maximum, 2.0 Vp-p Subcarrier maximum  
COUPLING: ..... AC or Sync Tip Clamped  
RETURN LOSS: ..... 40 dB minimum at 10MHz  
GAIN RANGE: ..... +4, -2 dB

### OUTPUT:

OUTPUT: ..... 6, 75Ω, source terminated  
BANDWIDTH: ..... 12 MHz minimum (-3dB)  
DIFFERENTIAL PHASE: ..... 0.1° 10 to 90 % APL, 5 MHz  
DIFFERENTIAL GAIN: ..... 0.1% 10 to 90 % APL, 5 MHz  
TILT, Field and Line: ..... 1% Maximum  
FREQUENCY RESPONSE: ..... ± 0.1 dB maximum, 0.1 to 5 MHz  
GROUP DELAY: ..... 3 nsec maximum to 5 MHz  
ELECTRICAL LENGTH: ..... 8 nsec nominal  
RETURN LOSS: ..... 40 dB to 10 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

# VEQ-2105A EQUALIZING 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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REV2 MAR01 (REV.E PCB)

VEQ-2105A