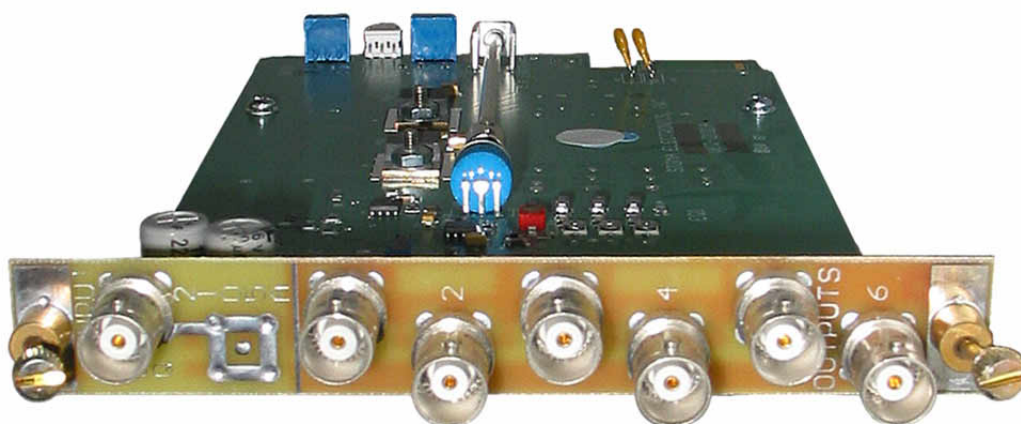


VEQ-2101A

WIDEBAND EQUALIZING VIDEO
DISTRIBUTION AMPLIFIER

INSTRUCTION MANUAL



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VEQ-2101A EQUALIZING DISTRIBUTION AMPLIFIER

GENERAL:

The VEQ-2101A Wideband Equalizing Video Distribution Amplifiers are designed to provide six (6) outputs from a single NTSC or PAL video source. The 110 MHz bandwidth of the VEQ-2101A makes it compatible with all wideband video applications. The input is compatible with 1 Vp-p video and 2 Vp-p Subcarrier signals. The VEQ-2101A 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 wideband distribution amplifier or a group of secondary wideband amplifiers dependent upon how many outputs are required.

POWER:

The VEQ-2101A 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 VEQ-2101A.

FRAMES:

The VEQ-2101A 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.

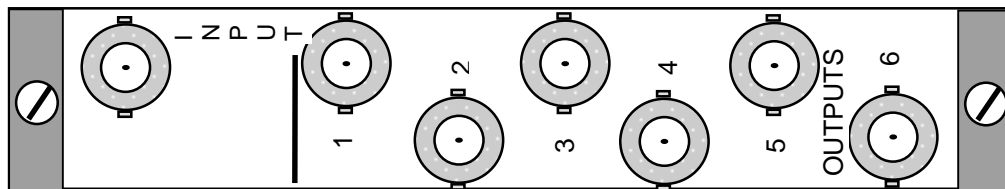
Additional information on the various frames is available. Please refer to the special section on frames. If this information is not provided with this shipment, contact Sigma Electronics for assistance.

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 terminated into 75W.

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-2101A EQUALIZING DISTRIBUTION AMPLIFIER

FRONT PANEL:

The gain and DC offset adjustments (Figure 2) can be accessed from the front of the frame. 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 ± 2 dB.

The cable length adjustment (R35) will compensate for up to 500 feet of 8281 cable or 350 feet of 8241F cable.

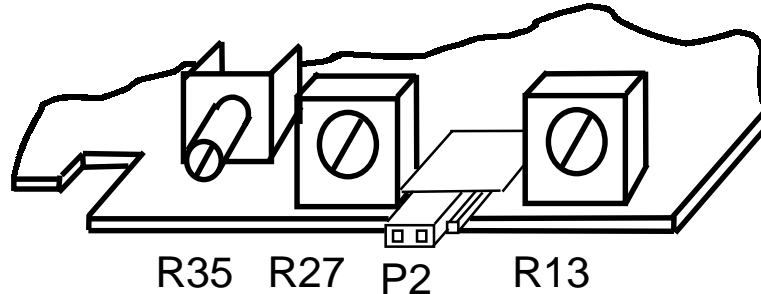


Figure 2: Front Panel

ADJUSTMENTS:

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

C8:Frequency response. Optimized by factory setup.

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

R35:Cable Length Equalization. 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: -30 dB minimum, 0.1 to 100MHz
GAIN RANGE: ± 2 dB

OUTPUT:

OUTPUT: 6, 75 Ω , source terminated
BANDWIDTH: 110 MHz minimum (-3dB)
DIFFERENTIAL PHASE: 0.15° max. 10 to 90 % APL, 4.43 MHz
DIFFERENTIAL GAIN: 0.15% max. 10 to 90 % APL, 4.43 MHz
TILT, Field and Line: 1% Maximum
FREQUENCY RESPONSE: (6 ft. max. at input), ± 0.15 dB maximum, 0.1 to 100 MHz
(500 ft. at input), ± 0.30 dB maximum, 0.1 to 100 MHz
GROUP DELAY: 3 nsec maximum to 20 MHz
5 nsec maximum to 100 MHz
ELECTRICAL LENGTH: 15 nsec nominal
RETURN LOSS: -35 dB, 0.1 to 100MHz

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-2101A 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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REV1 APR01 (REV.E PCB)

VEQ-2101A