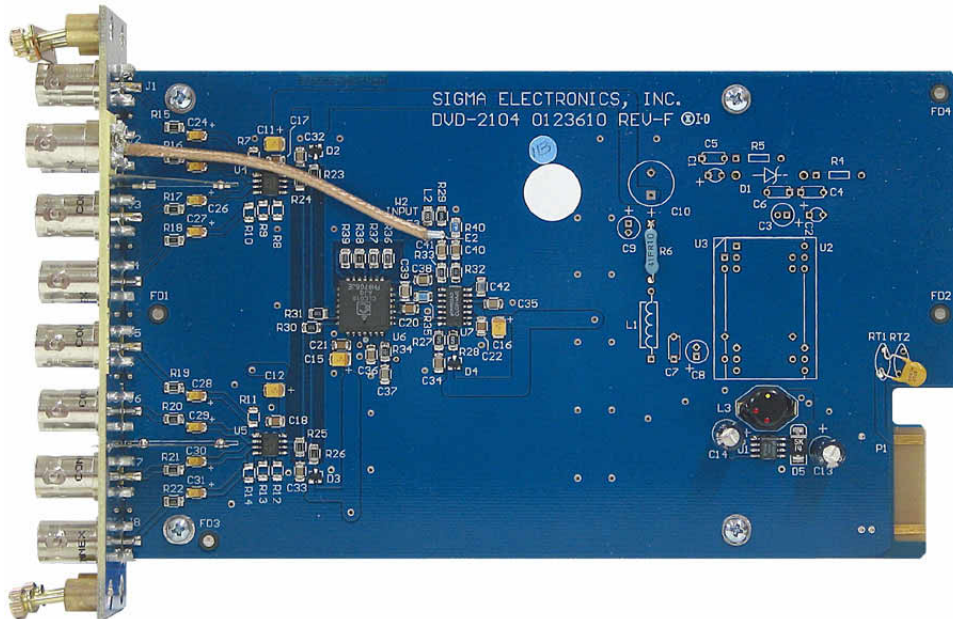


DVD-2104

DIGITAL VIDEO DISTRIBUTION AMPLIFIER
RECLOCKING AND EQUALIZATION

INSTRUCTION MANUAL



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DVD-2104 SERIAL DIGITAL VIDEO DISTRIBUTION AMPLIFIER

GENERAL:

The DVD-2104 is a 1 input x 8 output Serial Digital Video Distribution Amplifier with reclocking and equalization. The distribution amplifier provides eight outputs from a SMPTE 259M / CCIR 601 input. The module is designed for applications of Belden 8281 coaxial cable or equivalent to not exceed 1000 feet (300 meters).

The compensation for signal roll off degradation through long lengths of coax is provided by the equalization circuitry. The equalization of the signal does not correct timing variations which also occurs in long cable length applications. To correct for jitter the Serial Digital Signal must be reclocked. This corrects for timing mismatch between the serial data bits. The greatest assurance of not having data errors in long cable length applications is provided by the equalization and reclocking of the DVD-2104.

POWER:

The DVD-2104 operates from bus voltages of unregulated +20 VDC and -20 VDC. These voltages are supplied by the Sigma frame/power supply. The module regulates the bus voltage to +5 VDC via the DC/DC converter, U3. Circuit protection is provided by RT1 and RT2. These PTC Thermistors (Positive Temperature Coefficient Thermal Resistors) serve as permanent, self resetting, fuse devices. In the event of excessive current draw, on either of the bus lines, the PTC on the line will open and the red LED, DS1, will illuminate. Upon correction of the fault, the PTC Thermistor will cool to an operational temperature and reset. The red LED will turn off when the PTCs reset.

FRAMES:

The DVD-2104 module can reside in any of four (4) 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, a preexisting frame must be present for proper operation. Sigma would like to emphasize the fact that any of the Series 2100 modules can be installed with any other Series 2100 module within the Series 2100 frames.

- ◆ The SS-2100-2 frame is designed for desk-top applications. This frame provides two (2) positions for a single module which occupies two slots, such as the DVD-2104, or dual single slot module configurations. An optional tray (RMT-2100-2A) is available for rack installations.
- ◆ The SS-2100-6 frame is designed for 19 inch EIA rack installations. It provides six (6) slots for modules in 1 RU. This frame would support 3 of the DVD-2104 modules.
- ◆ The SS-2100-12 frame provides a redundant power supply in a 3 RU frame for 19 inch EIA rack installations. This frame has twelve (12) slot positions for modules. Since the DVD-2104 occupies two slots each the SS-2100-12 would support six (6) of these modules.
- ◆ The SS-2100-16 frame is also available for installations in a 19 inch EIA rack. This frame provides sixteen (16) slots for module within 3 RU. Eight of the DVD-2104 modules could be installed in the SS-2100-16.

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 the connectors located on the rear panel. BNC connectors are used for the Input and outputs. Each output is designed to drive a 75Ω load. The outputs must be terminated by a single end of line 75Ω termination to ensure proper signal level. Unused outputs do not require a 75Ω load.

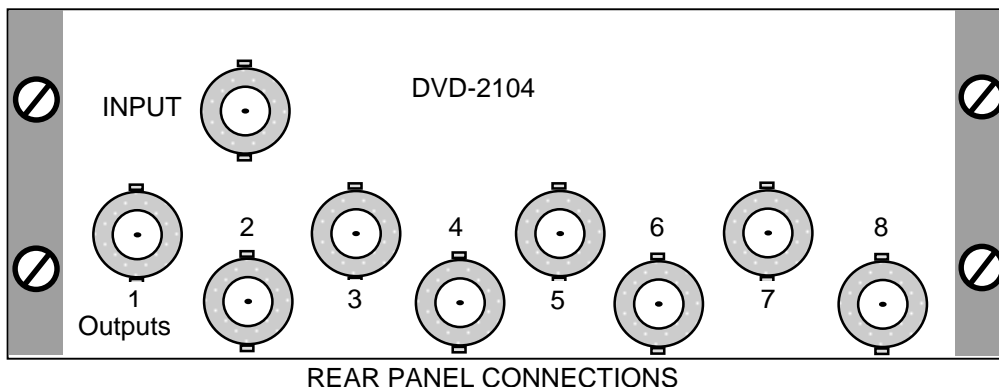


Figure 1

DVD-2104 SERIAL DIGITAL VIDEO DISTRIBUTION AMPLIFIER

CONFIGURATION:

There are no adjustments or jumpers provided on this module. The module does not require any adjustments for operation.

SPECIFICATIONS:

INPUT:

VIDEO INPUT: SMPTE 259M, 800 mVp-p typical
INPUT RETURN LOSS: 15dB minimum, 5 MHz to 270 MHz
EQUALIZATION: Automatic
SERIAL DATA RATES: 143 Mb/s, 177 Mb/s, 270 Mb/s, 360 Mb/s
INPUT CABLE LENGTH: 1000 feet (300M) maximum, (BELDEN 8281 or equivalent)

OUTPUT:

OUTPUT SIGNAL 8 Outputs, 800 mVp-p typical, $\pm 10\%$
OUTPUT RETURN LOSS 15 dB minimum, 5 MHz to 270 MHz
OUTPUT TO OUTPUT ISOLATION 20 dB minimum, 5 MHz to 270 MHz
OVERSHOOT 10% maximum of total signal

ENVIRONMENTAL:

OPERATIONAL TEMPERATURE: 0° to +50° C (+32° to +122° F)

MECHANICAL:

SIZE: 2 slots, occupies 2 adjacent positions in a Sigma frame

TECHNICAL MANUAL:

A manual including schematics and service information is available upon request. This information is intended for the service of the module and is not required for the operation of the module. Modules should be serviced by qualified personnel only. Sigma Electronics, Inc. recommends service to be performed at the 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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