

AVENUE

Avenue™ signal integration system

Model 5100 Digital Video DA Data Pack

ENSEMBLE

D E S I G N S

Revision 4.1 SW v1.1.0

This data pack provides detailed installation, configuration and operation information for the **5100 Digital Video Distribution Amplifier (DA)** as part of the Avenue Signal Integration System.

The module information in this data pack is organized into the following sections:

- Module Overview
- Applications
- Installation
- Cabling
- Module Configuration and Control
 - Front Panel Controls and Indicators
 - Avenue PC Remote Control
 - Avenue Touch Screen Remote Control
- Troubleshooting
- Software Updating
- Warranty and Factory Service
- Specifications

MODULE OVERVIEW

The 5100 Serial DA provides distribution of a serial digital input signal to eight outputs with automatic input equalization. No processing of the signal path other than cable equalization is performed on this module. It can distribute signals where reclocking is not required for any of the following digital video data rates:

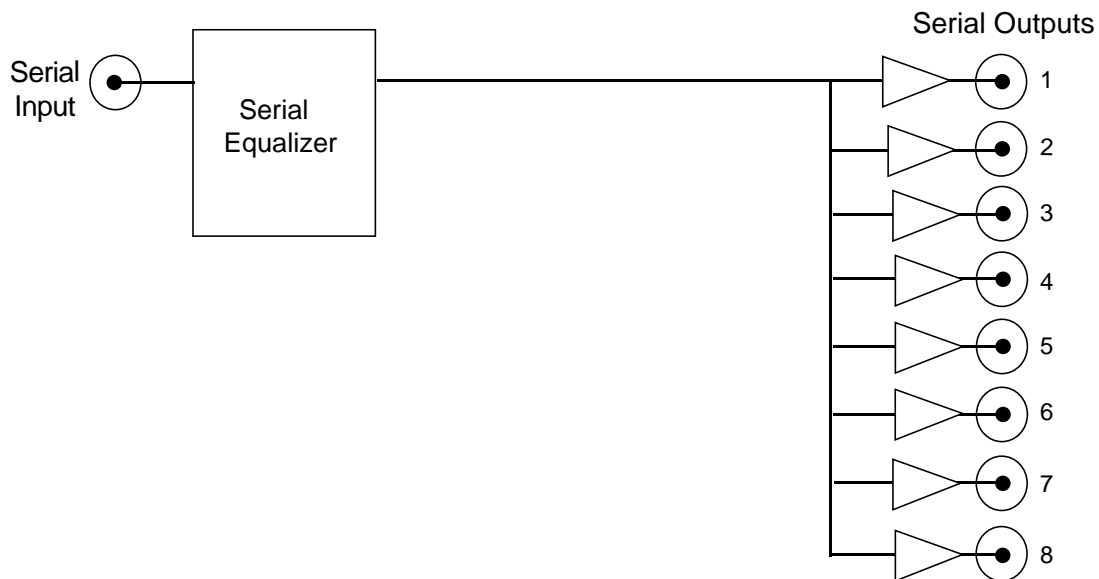
- 143 Mbs
- 177 Mbs
- 270 Mbs
- 360 Mbs

Up to 300 meters of cable can be equalized locally on the module for the three lower data rates and 200 meters for the 360 Mbs data rate. Maximum cable length can also be set and other module status parameters monitored remotely using the optional Avenue Touch Screen Control Panel and the Avenue PC Control Application.

As shown in the block diagram below, the signal passes through a serial equalizer circuit. The signal strength of the equalized output is monitored by the module processor for cable equalization and EQ warning information available to the user via the front panel control indicator or through the optional Avenue control interfaces. The serial outputs are buffered then AC coupled to the BNCs on the rear of the frame providing eight serial outputs for distribution.

Power is derived from the ± 12 volt frame power. It is regulated to the required +5 volts for the module by on-board regulator. The module is fused with a resettable fuse device. If the fuse opens due to an overcurrent condition, the module will lose power. After pulling the module, the fuse will reset automatically requiring no replacement fuse.

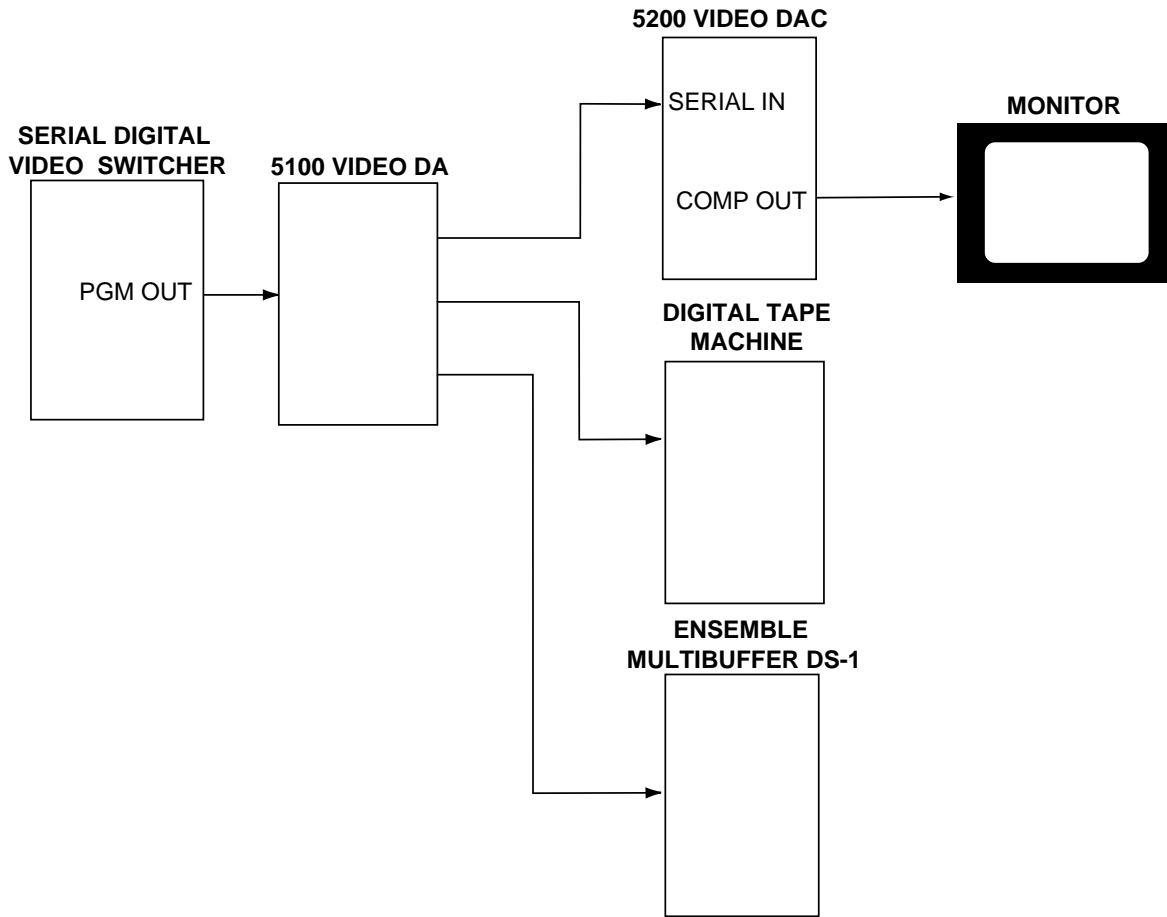
Module ID information (slot location, software version and board revision) can be monitored by the optional frame System Control module and read using the optional interfaces available.



5100 Digital Video DA Functional Block Diagram

APPLICATIONS

The 5100 Serial Digital Distribution Amplifier can be used in applications where distribution of unreclocked serial digital signals is required as shown in the example below. The distributed serial digital signal can be fed to an Avenue 5200 Video Digital to Analog Converter for feeding a composite monitor to view the Program output. Other destinations might include digital tape recorders and an Ensemble Multibuffer DS-1 for utilization of the digital signals in computer graphics or still store applications.



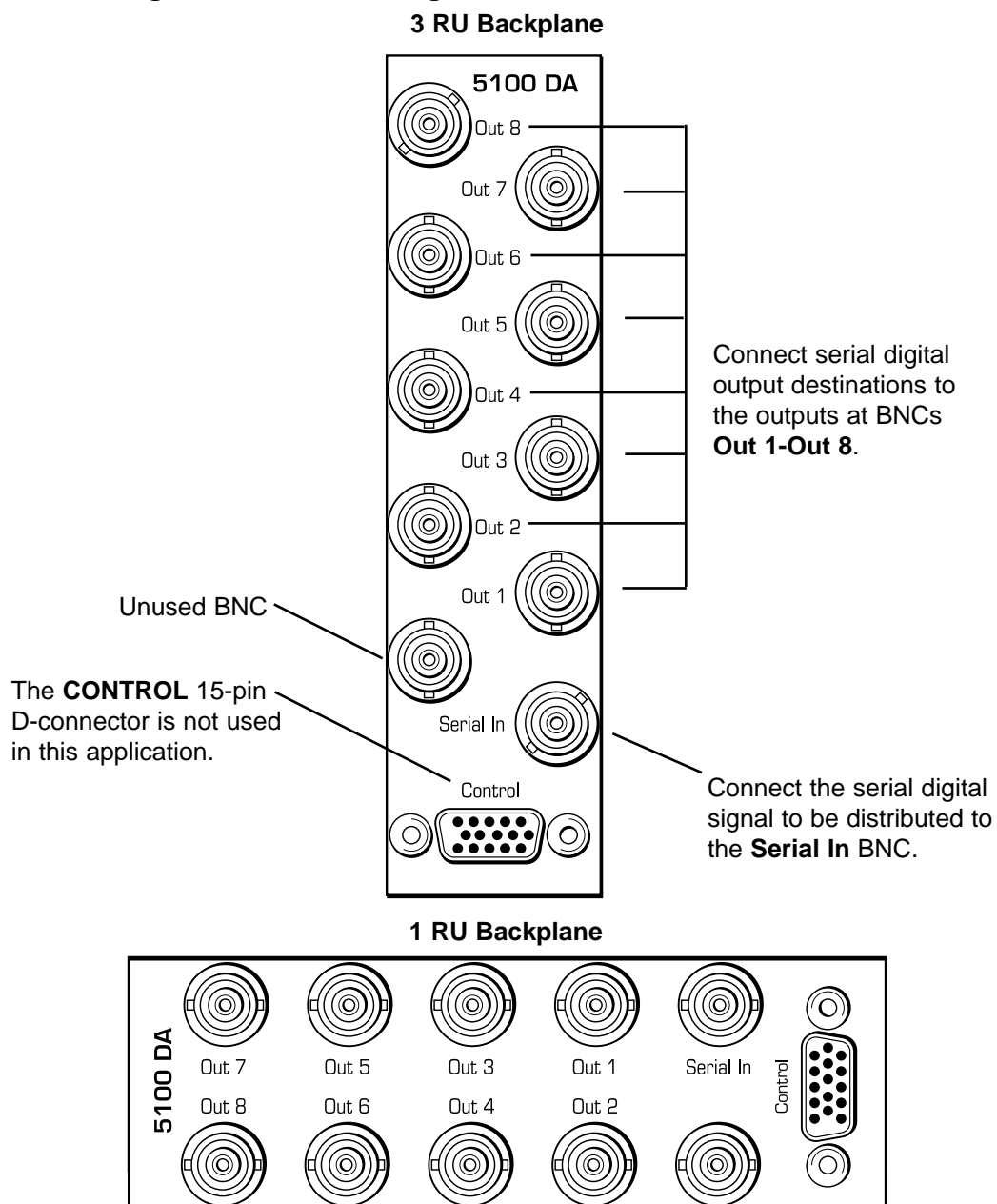
5100 Serial Digital Video Program Out Distribution to Digital Destinations

INSTALLATION

Plug the 5100 module into any one of the ten slots in the tray and install the plastic overlay provided onto the corresponding group of rear BNC connectors associated with the module location. Note that the plastic overlay has an optional adhesive backing for securing it to the frame. Use of the adhesive backing is only necessary if you would like the location to be permanent and is not recommended if you need to change module locations. This module may be hot-swapped (inserted or removed) without powering down or disturbing performance of the other modules in the system.

CABLING

Refer to the 3 RU and 1 RU backplane diagrams of the module below for cabling instructions. Note that unless stated otherwise, the 1 RU cabling explanations are identical to those given in the 3 RU diagram.



MODULE CONFIGURATION AND CONTROL

The configuration parameters for each Avenue module must be selected after installation. This can be done remotely using one of the Avenue remote control options or locally using the module front panel controls. Each module has a **REMOTE/LOCAL** switch on the front edge of the circuit board which must first be set to the control mode you will be using.

The configuration parameter choices for the module will differ between **Remote** and **Local** modes. In **Remote** mode, the choices are made through software and allow more selections. The **5100 Parameter Table** below summarizes and compares the various configuration parameters that can be set remotely or locally and the default/factory settings.

If you are not using an remote control option, the module parameters must be configured from the front panel switches. Parameters that have no front panel control will be set to a default value. The **Local** switches are illustrated in the **Front Panel Controls and Indicators** section following the **5100 Parameter Table**.

Avenue module parameters can be configured and controlled remotely from one or both of the remote control options, the Avenue Touch Screen or the Avenue PC Application. Once the module parameters have been set remotely, the information is stored on the module CPU. This allows the module be moved to a different cell in the frame at your discretion without losing the stored information. Remote configuration will override whatever the switch settings are on the front edge of the module.

For setting the parameters remotely using the Avenue PC option, refer to the **Avenue PC Remote Configuration** section of this document.

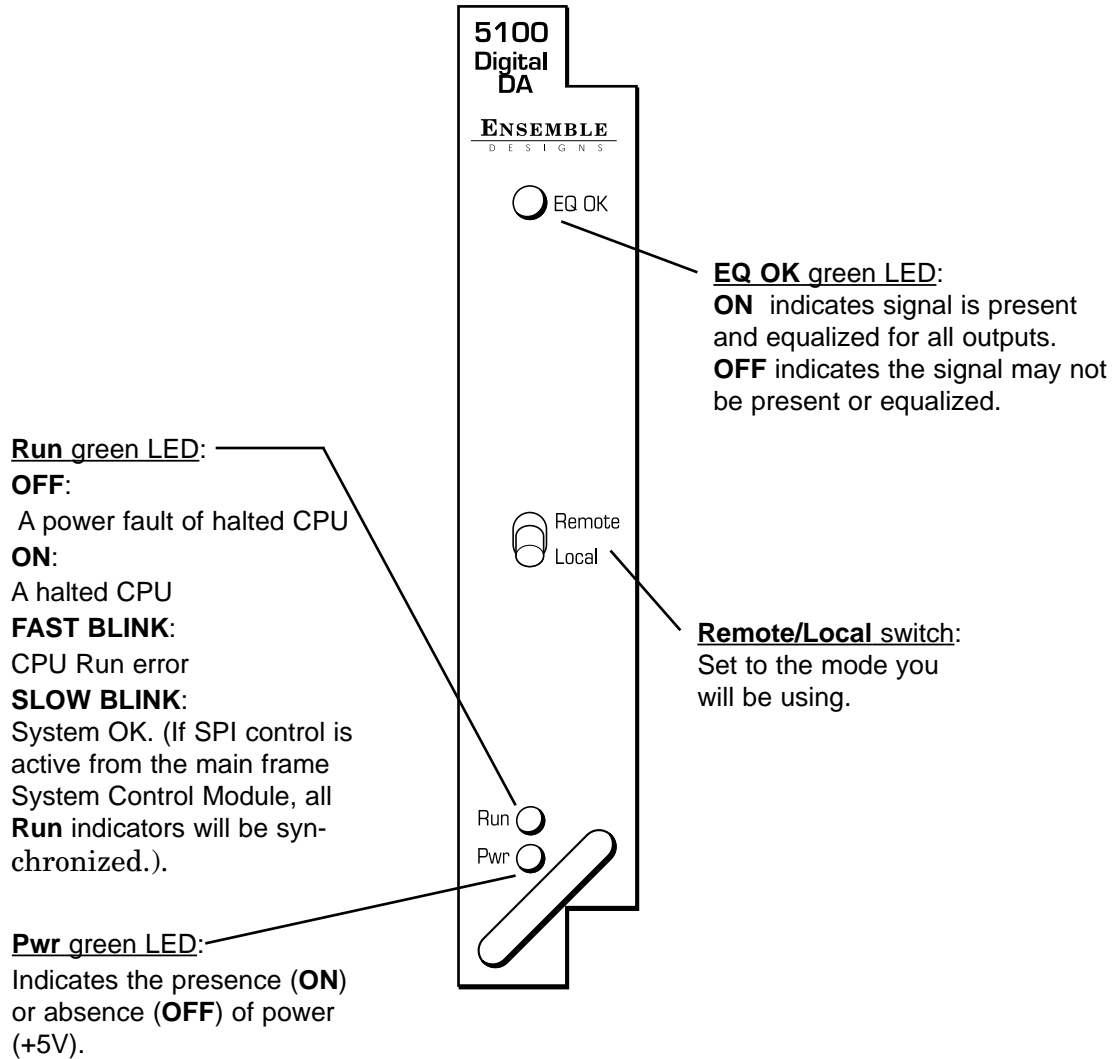
For setting the parameters remotely using the Avenue Touch Screen option, refer to the **Avenue Touch Screen Remote Configuration** section of this data pack following Avenue PC.

5100 Parameter Table

CONTROL	LOCAL	REMOTE	DEFAULT VALUE
Max Cable	300 meters	200-350 meters	300 meters

Front Panel Controls and Indicators

Each front edge indicator and switch setting is explained in the diagram below:



Avenue PC Remote Configuration

The Avenue PC remote control menus for this module are illustrated and explained below. For more information on using Avenue PC, refer to the Avenue PC Control Application Software data pack that came with the option.

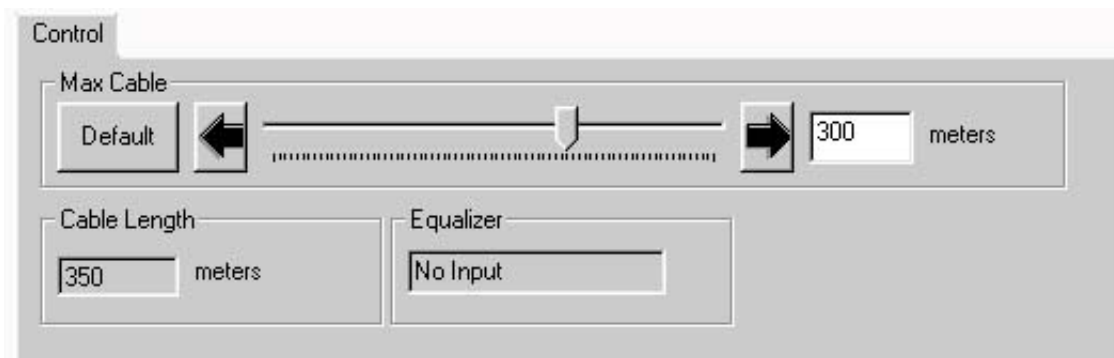
5100 Avenue PC Menus

Set the following parameter from the **Control** menu:

- **Max Cable** – set the maximum cable equalization between 200 to 350 meters.

The following indicators are available from this menu:

- **Cable Length** – displays the amount of cable being equalized
- **Equalizer** – indicates input signal status of **No Input** or **Input OK**.



Avenue Touch Screen Remote Configuration

Avenue Touch Screen remote control menus for this module are illustrated and explained below. For more information on using Avenue Touch Screens, refer to the Avenue Touch Screens data pack that came with the option.

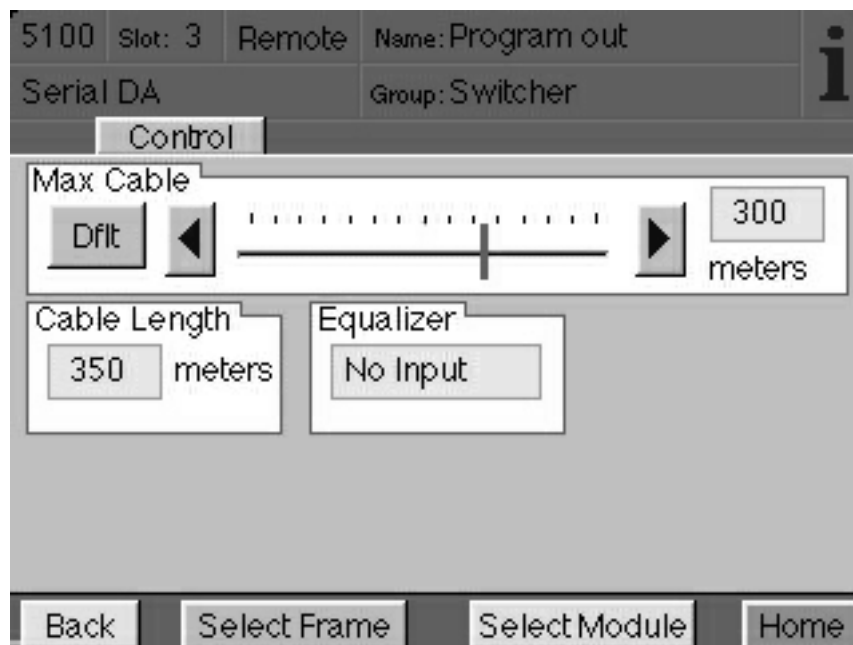
5100 Avenue Touch Screen Menus

Set the following parameter from the **Control** menu:

- **Max Cable** – set the maximum cable equalization between 200 to 350 meters.

The following indicators are available from this menu:

- **Cable Length** – displays the amount of cable being equalized.
- **Equalizer** – indicates input signal status of **No Input** or **Input OK**.



TROUBLESHOOTING

As a troubleshooting aid, the signal equalization and presence, power and CPU status can be easily monitored from the front panel of this module using the indicators explained in the previous section.

If using the **Remote** mode, the following status items can be monitored using the Avenue Touch Screen Control Panel or PC Application:

- Equalization (cable length)
- Power status
- Slot ID, Software Version and Board Revision

Refer to the overall troubleshooting tips given below for the **5100** module:

No status lights are lit on front panel:

- Check that frame power is present (green LED{s} on frame power supplies).
- Check that module is firmly seated in frame. Try removing it and plugging it in again.

Can't control module:

- Check status of CPU **Run** green LED. Should be blinking slowly and in unison with other modules if System module is present. If not, try removing it and plugging it in again.
- System module may not be working properly if installed.

No signal out of module:

- Check status of EQ OK green LED. Should be lit. If not, check the input signal for presence and quality.
- Check cabling to input of module.
- Check remote cable equalization by switching the module to **Local** using the front panel switch and see if the EQ OK LED comes on.

You may also refer to the technical support section of the Ensemble or Graham-Patten web sites for the latest information on your equipment at the URLs below:

<http://www.ensembledesigns.com/support>

<http://www.grahampatten.com>

SOFTWARE UPDATING

Software upgrades for each module can be downloaded remotely if the optional System Control module is installed. These can be downloaded onto your PC and then Avenue PC will distribute the update to the individual module. (Refer to the Avenue PC documentation for more information) Periodically updates will be posted on our web site. If you do not have the required System Control Module and Avenue PC, modules can be sent back to the factory for software upgrades.

WARRANTY AND FACTORY SERVICE

Warranty

This Module is covered by a five year limited warranty, as stated in the main Preface of this manual. If you require service (under warranty or not), please contact Ensemble Designs or Graham-Patten Systems and ask for customer service before you return the unit. This will allow the service technician to provide any other suggestions for identifying the problem and recommend possible solutions.

Factory Service

If you return equipment for repair, please get a Return Material Authorization Number (RMA) from the factory first.

Ship the product and a written description of the problem to:

Ensemble Designs, Inc.

Attention: Customer Service RMA #####

870 Gold Flat Rd.

Nevada City, CA. 95959 USA

(530) 478-1830

Fax: (530) 478-1832

service@endes.com

<http://www.ensembledesigns.com>

Be sure to put your RMA number on the outside of the box.

OR

Graham-Patten Systems, Inc.

13366 Grass Valley Avenue

Grass Valley, CA 95945

(800) 422-6662 or (530) 273-8412

Fax: (530) 273-7458

service@gpsys.com

<http://www.grahampatten.com>

SPECIFICATIONS

5100 Video DA

Input Signal Description:

Number:	One	
Signal Type:	Serial Digital (SMPTE 259M)	
Impedance:	75 ohm	
Return Loss:	143, 177, 270 Mbs	>15dB
	360 Mbs	>15dB
	540 Mbs	Not specified*
Maximum Cable Loss:	143, 177, 270 Mbs	300 meters of Belden 8281
	360 Mbs	200 meters of Belden 8281
	540 Mbs	Not specified*

Output Signal Description

Number:	Eight	
Signal Type:	Serial Digital (SMPTE 259M)	
Impedance:	75 ohm	
Return Loss:	143, 177, 270 Mbs	>15dB
	360 Mbs	>15dB
	540 Mbs	Not specified*
Output DC:	None (AC coupled)	

General Specifications

Power Consumption:	< 2.5 watts
Temperature Range:	0 to 40 degrees C ambient (all specs met)
Relative Humidity:	0 to 95% noncondensing
Altitude:	0 to 10,000 ft
Fusing:	1.5 Amp PTC resettable fuse

Due to ongoing product development, all specifications subject to change.

*Module will operate in many 540 Mbs applications but performance is not specified.