AVENUE

Avenue™ signal integration system

Model 5120/5125 Dual Digital Video DAs Data Pack

ENSEMBLE DESIGNS

Revision 2.1 SW v1.1.1

This data pack provides detailed installation, configuration and operation information for the **5120** and **5125 (Reclocking) Dual Digital Video Distribution Amplifiers (DAs)** 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

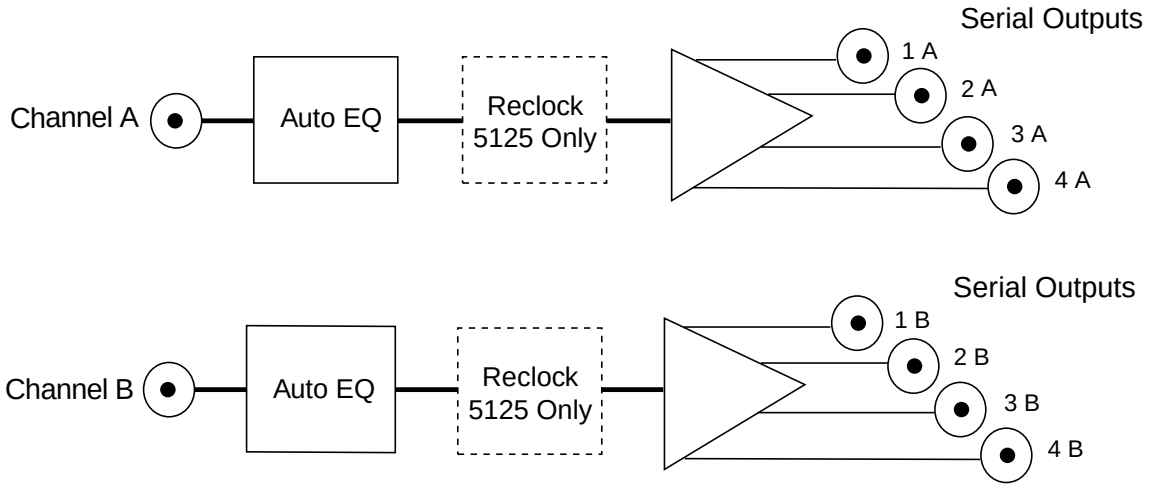
The 5120 Dual Serial DA is a two-channel digital video distribution amplifier with four outputs per channel. The 5125 is also a two-channel digital video distribution amplifier that provides reclocking of the serial data stream, improving jitter performance. The two output channels on each module provide distribution of a serial digital input signal to four outputs with automatic input equalization.

Up to 300 meters of cable can be equalized locally on each module. 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, each input 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 video in the 5125 passes through reclocking circuitry. 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.



5120/5125 Dual Serial DA Functional Block Diagram

APPLICATIONS

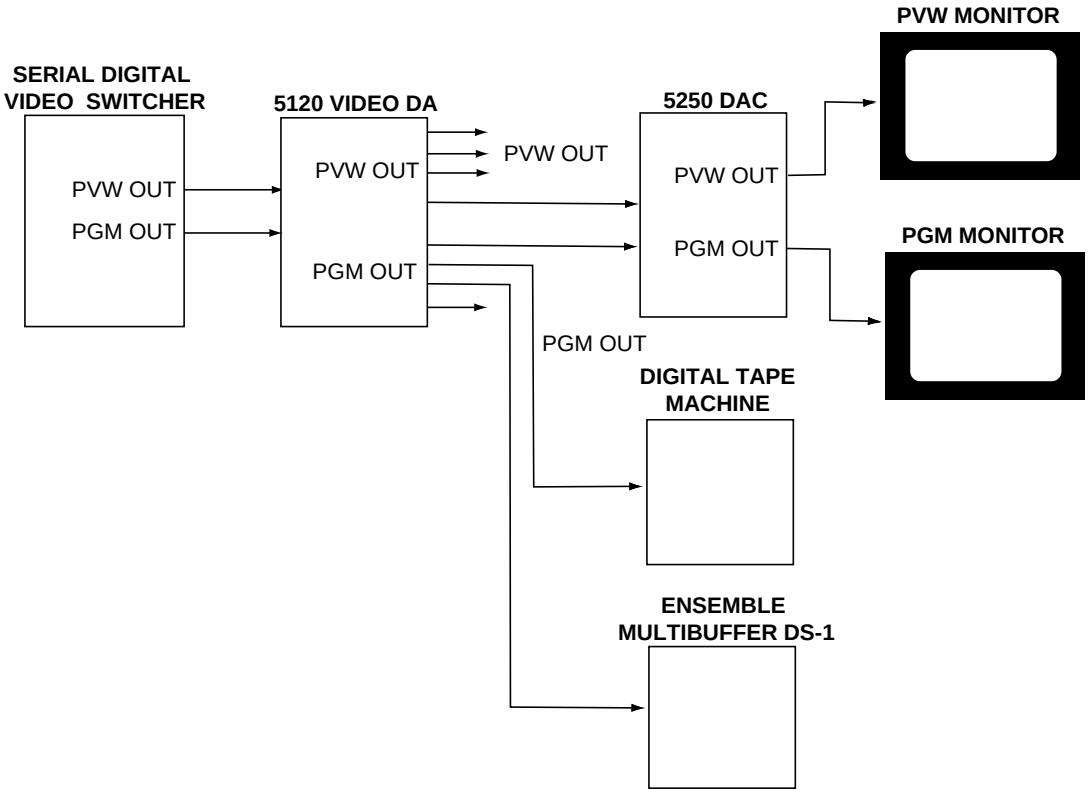
The 5120 and 5125 Dual Serial DA modules can be utilized in distribution applications where a modest number of DAs are required. The two channel capability can save rack space and cost.

5120 Dual Serial DA

The 5120 Dual Serial Distribution Amplifier is a two-channel non-processing DA with cable equalization and signal detection. In the example below, the serial digital PGM and PVW outputs of a digital switcher are distributed throughout a facility from the 5120 DA. One PGM and PVW output is fed to a 5250 DAC for viewing the outputs on analog monitors.

5125 Reclocking Dual Serial DA

The 5125 Reclocking Dual Serial Distribution Amplifier can be used in similar distribution applications where reclocking is required to reduce jitter from long cable runs or unstable video sources.



5120 Dual Serial DA Program and Preview Output Distribution

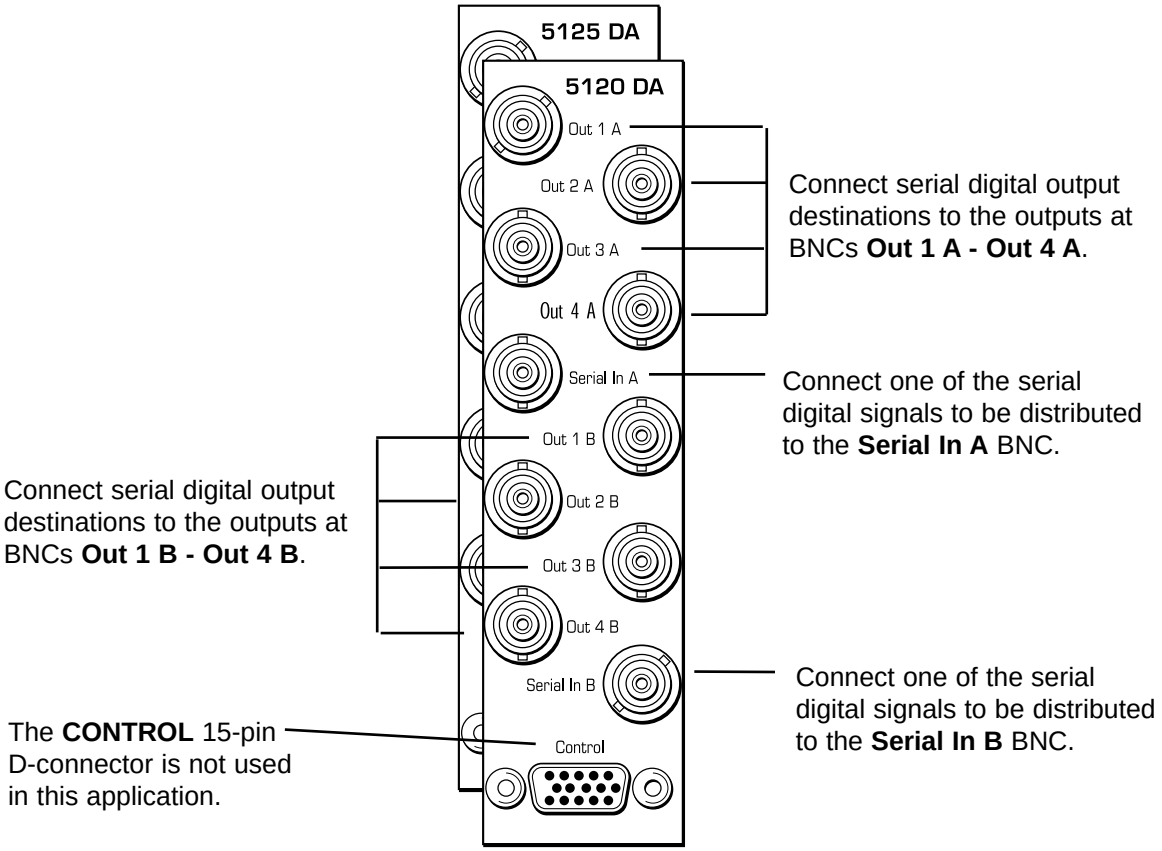
INSTALLATION

Plug the 5120 or 5125 module into any one of the 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.

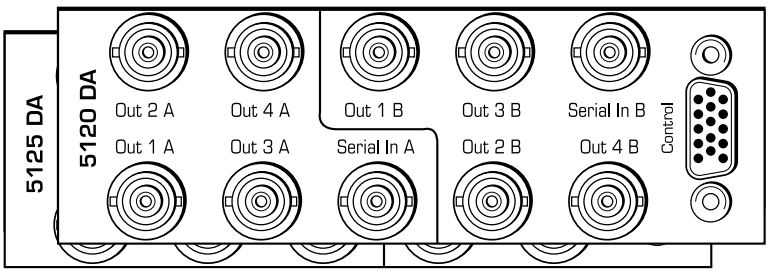
CABLING

Refer to the 3 RU and 1 RU backplane diagrams of the modules below for cabling instructions. Note that both modules have identical rear connectors. Unless stated otherwise, the 1 RU cabling explanations are identical to those given in the 3 RU diagram.

3 RU Backplane



1 RU Backplane



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 **5120/5125 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 **5120/5125 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.

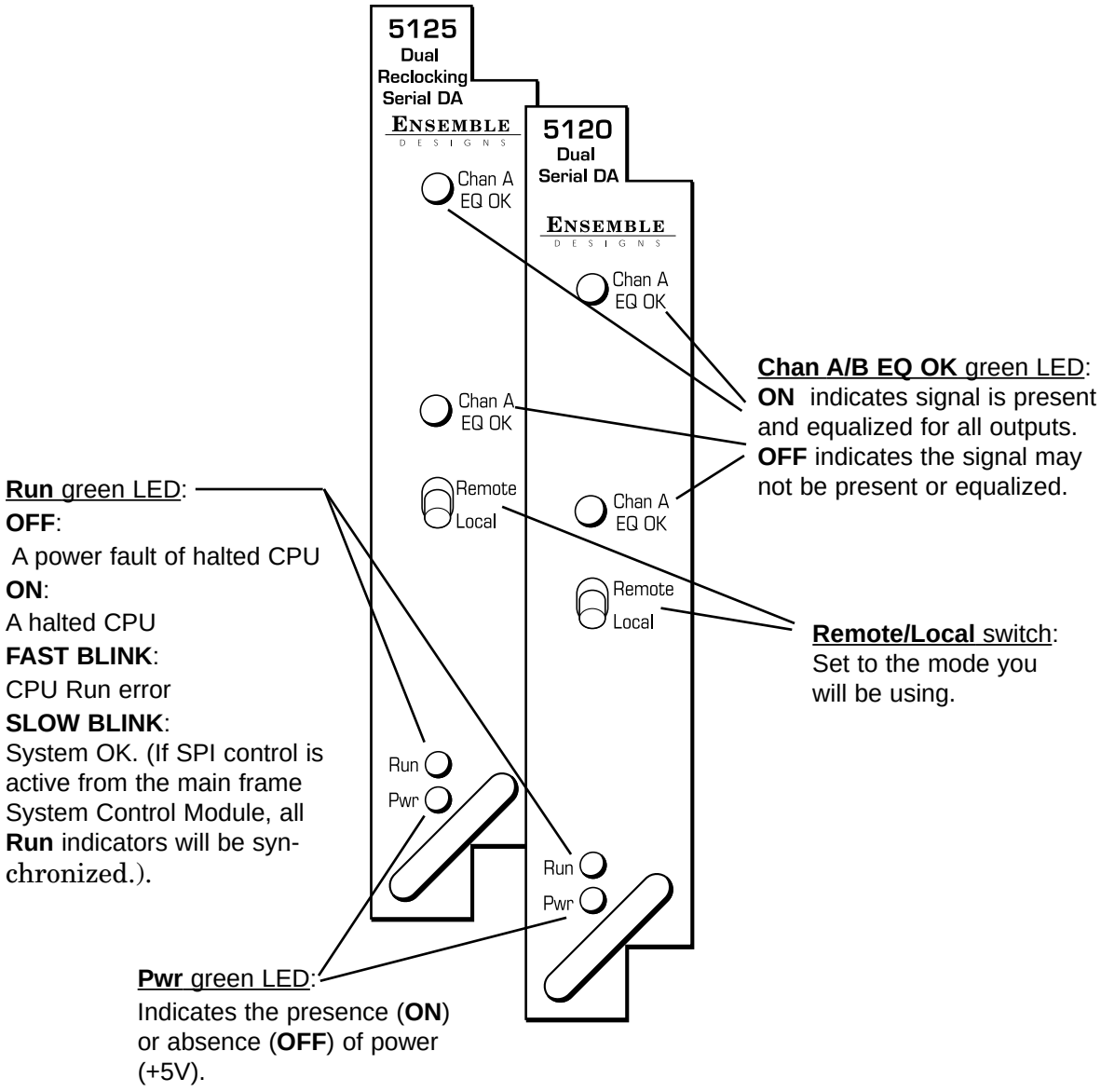
For setting the parameters remotely using the Avenue Touch Screen option, refer to the **Avenue Touch Screen Remote Configuration** section of this data pack following Avenue PC.

5120/5125 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 these modules 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.

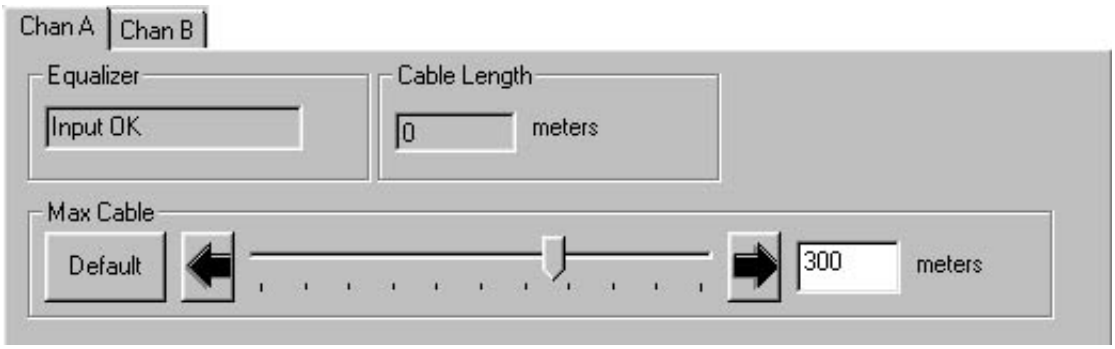
5120 Avenue PC Menus

Set the following parameter from the **Chan A** and **Chan B** menus:

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

The following indicators are available from this menu:

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



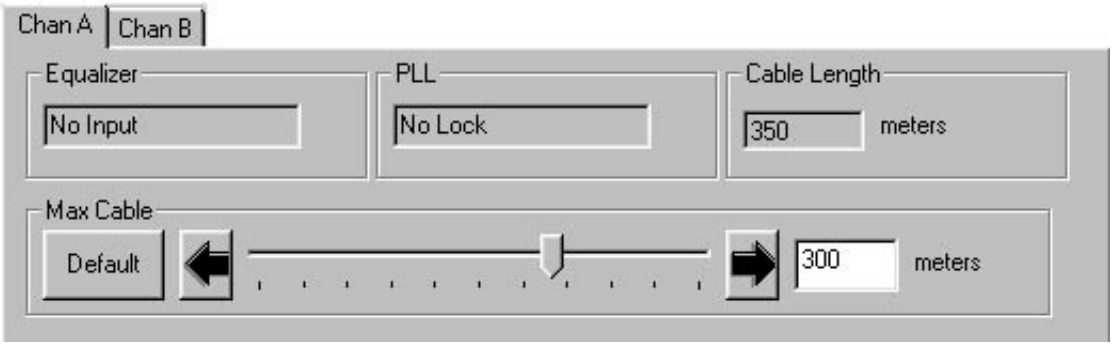
5125 Avenue PC Menus

Set the following parameter from the **Chan A** and **Chan B** menus:

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

The following indicators are available from this menu:

- **Equalizer** – indicates input signal status of **No Input** or **Input OK**.
- **PLL** – shows **Locked** or **Unlocked** status of the Phase Lock Loop circuit.
- **Cable Length** – displays the amount of cable being equalized.



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 Screen, refer to the Avenue Touch Screen data pack that came with the option.

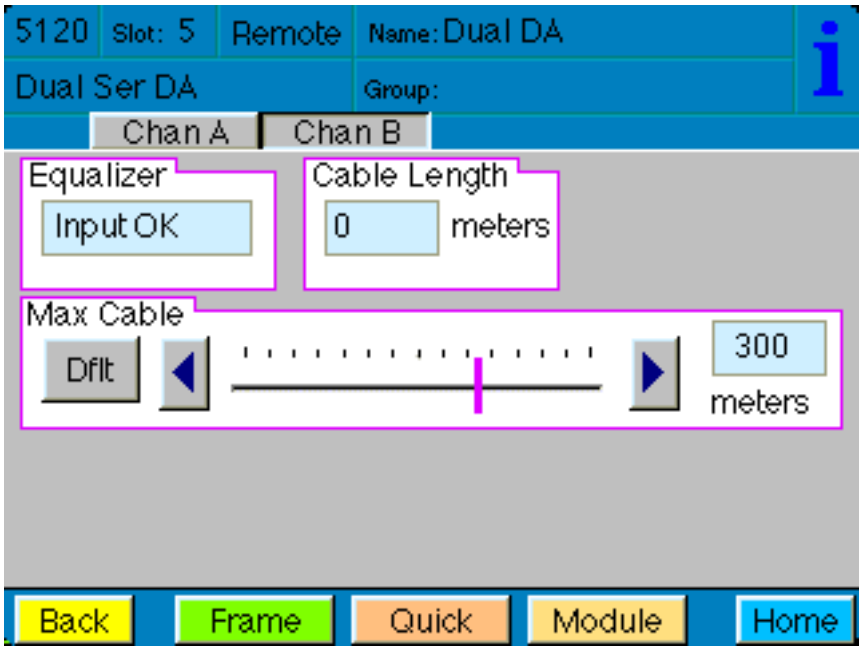
5120 Avenue Touch Screen Menus

Set the following parameter from the **Chan A** and **Chan B** menus:

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

The following indicators are available from this menu:

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



5125 Avenue Touch Screen Menus

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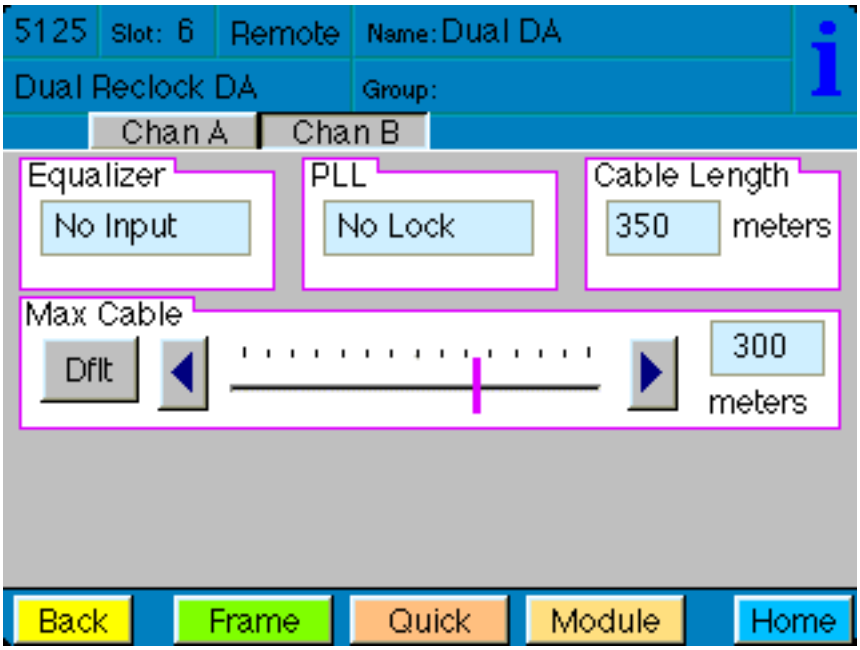

TROUBLESHOOTING

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 **5120/5125** 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

5120/5125 Dual Serial DA

Input Signal Description:

Number:	Two
Signal Type:	Serial Digital (SMPTE 259M)
Impedance:	75 ohm
Return Loss:	>15 dB
Maximum Cable Length:	300 meters of Belden 8281

Output Signal Description:

Number:	Four Per Channel
Signal Type:	Serial Digital (SMPTE 259M)
Impedance:	75 ohm
Return Loss:	>15 dB
Output DC:	None (AC coupled)

General Specifications:

Power Consumption:	4.0 Watts
Temperature Range:	0 to 50 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.