

# Model 7125 HD/SD/ASI Dual Reclocking DA Data Pack

Revision 2.1 SW v2.2.1

This data pack provides detailed installation, configuration and operation information for the **7125 HD/SD/ASI Dual Reclocking 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 7125 module is a dual-rate, serial digital distribution amplifier with automatic cable equalization and reclocking. It automatically detects and handles 270 Mb/s Standard Definition signals (525 or 625), 1.485 Gb/s High Definition signals, ASI data signals, and allows passing of embedded audio. The module provides two DAs on the one module with two sets of one serial digital input to four serial digital video outputs.

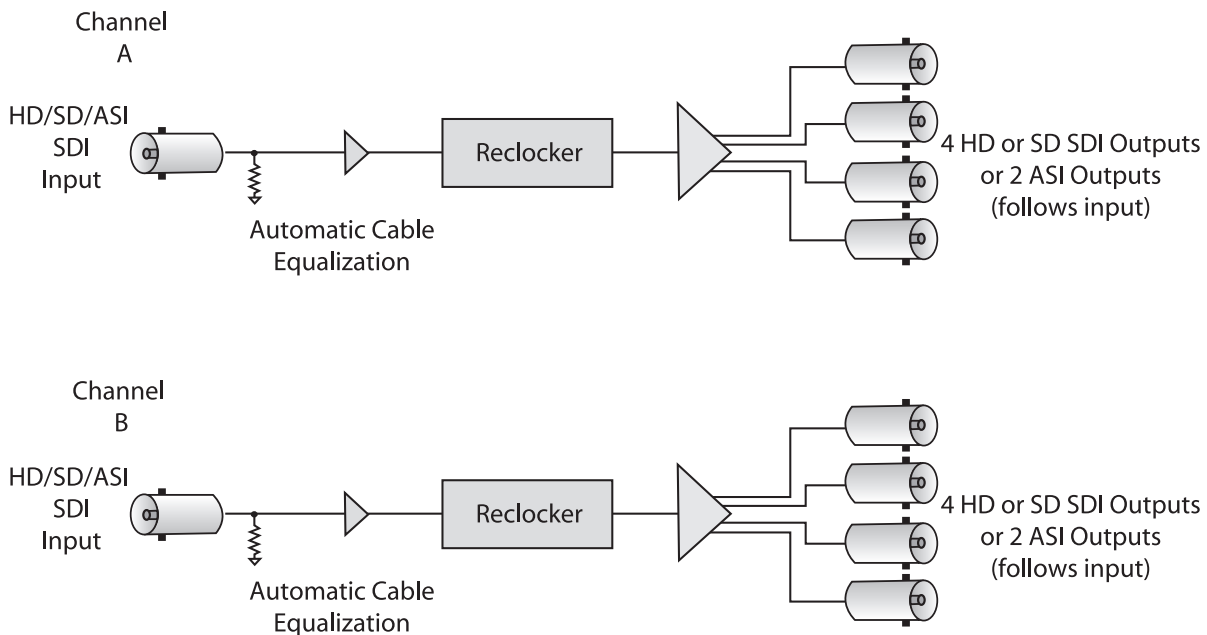
As shown in the block diagram below, the serial input signal passes through a serial equalizer circuit where cable equalization and input monitoring is done. This output signal then passes to a reclocking circuit. Here the serial input signal is locked to a local serial clock removing timing noise and improving jitter performance.

The output of the reclocker circuit feeds into output drivers which provide four HD or SD SDI serial digital outputs to the rear BNCs for distribution. When an ASI input is used two outputs are provided.

Power is derived from the  $\pm 12$  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.

The on-board CPU can monitor and report module ID information (slot location, software version and board revision), power status, and ancillary data status to the optional frame System Control module. This information can be accessed by the user or set to register an alarm if desired using the remote control options available.

Modules at software version 2.2.0 or later support SNMP (Simple Network Management Protocol) monitoring. For each applicable signal processing module, module, signal, and reference status are reported. For complete details on using SNMP monitoring, refer to the **Avenue System Overview** in the manual that accompanies each frame.

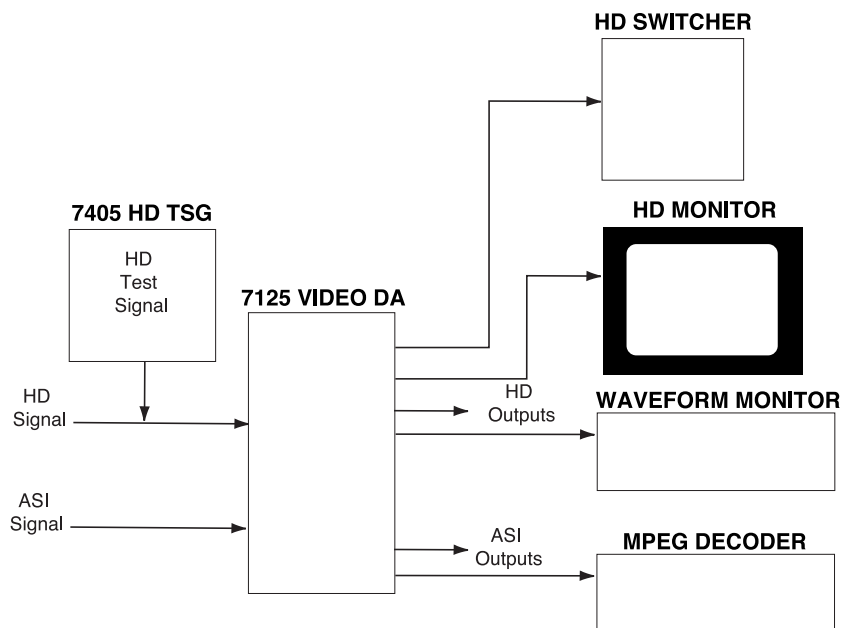


7125 HD/SD/ASI Dual Reclocking DA Functional Block Diagram

## APPLICATIONS

### High Definition Distribution

The 7125 module can be utilized to distribute an HD, SD or ASI signal. Some typical uses, such as distribution to an HD monitor, waveform monitoring equipment, and switcher inputs, are shown in the block diagram below. The signal is reclocked to reduce noise and jitter and allows distribution to any destination required. Destinations might include other Avenue modules for video processing, HD up/down conversion conversion, or embedding or disembedding of audio and many other functions



**7125 HD Reclocking DA Application**

In addition, the 7125 module can also provide distribution of a calibrated high definition signal throughout the facility from a 7405 HD Test Signal Generator when required. .

## **INSTALLATION**

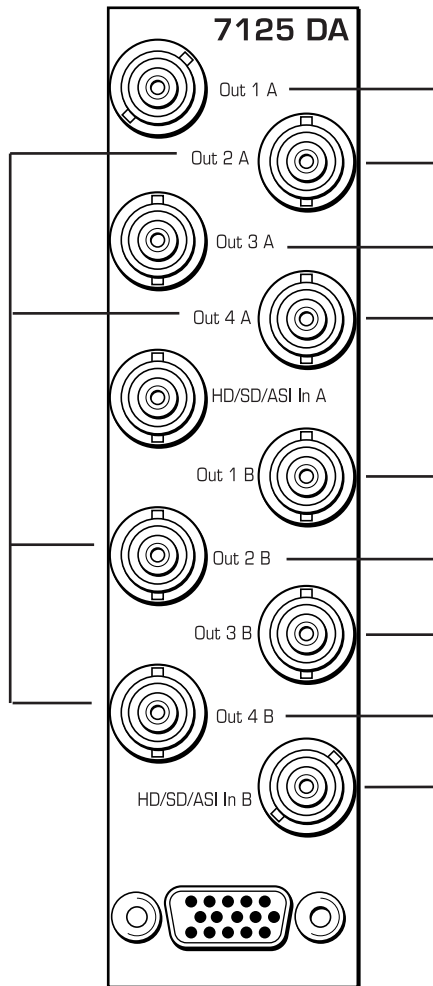
Plug the 7125 module into any one of the slots in the 1 RU or 3 RU frame and install the plastic overlay provided onto the corresponding group of rear BNC connectors associated with the module location. Note that the plastic overlay has an optional adhesive backing for securing it to the frame. Use of 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.

3 RU Backplane

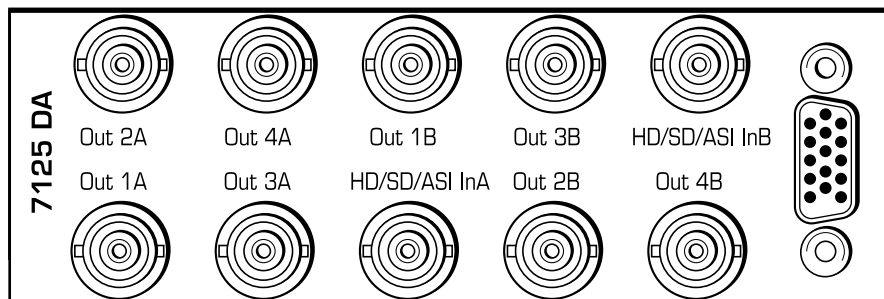
ASI signals are output at non-inverted BNC connectors **Out 2A and Out 4A** and **Out 2B and Out 4B**.



Connect HD or SD output destinations to the distributed signal at BNCs **Out 1A – Out 4A** and to **Out 1B - Out 4B**.

Connect the HD, SD serial digital signal or ASI signal to be distributed to the **HD/SD/ASI In BNC**.

1 RU Backplane



## MODULE CONFIGURATION AND CONTROL

There are no configuration parameters that require setting on the 7125 module. Status of the module can be monitored remotely using one of the Avenue remote control options or locally using the module front panel controls.

If you are not using a remote control option, the module status can be monitored from the front panel LEDs illustrated in the **Front Panel Control and Indicators** section below.

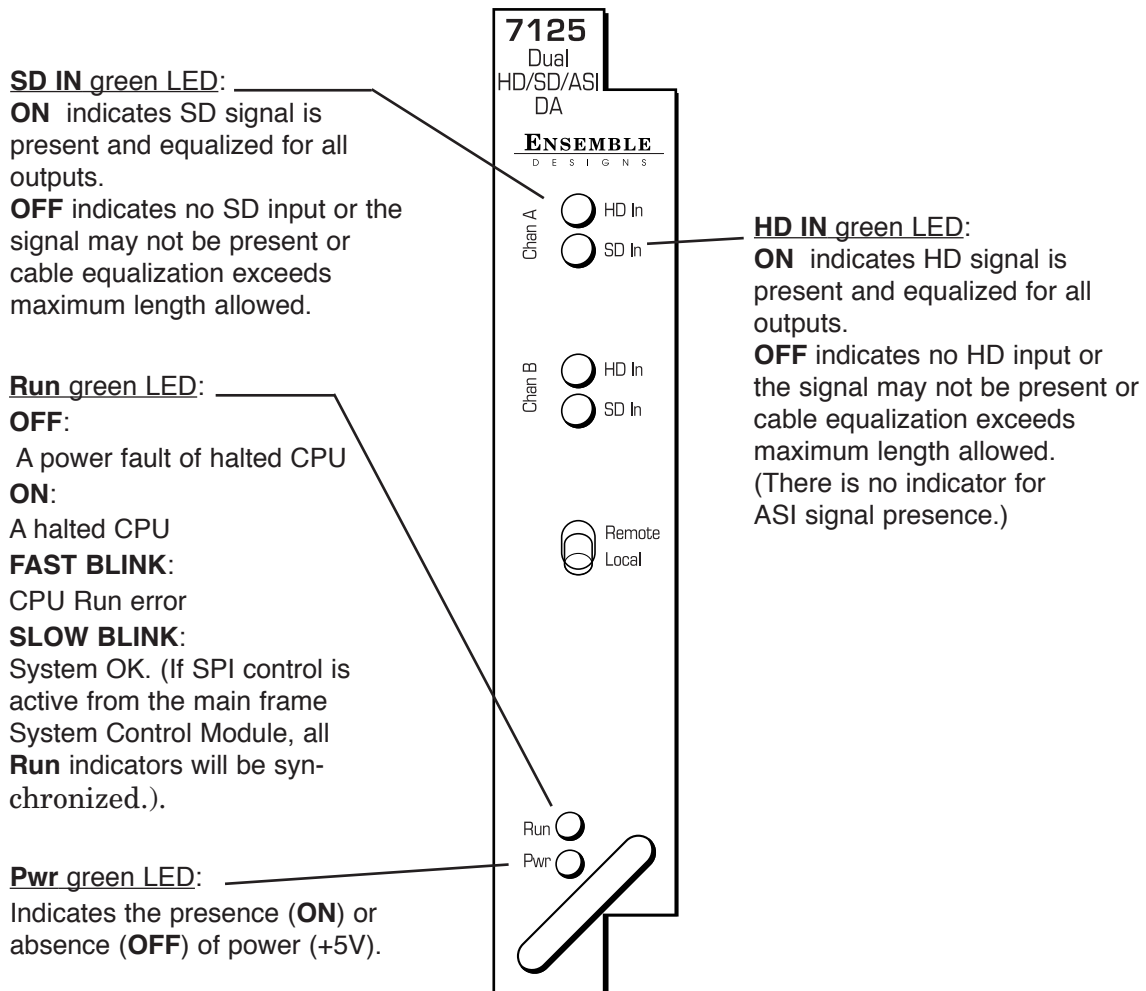
For monitoring the parameters remotely using the Avenue PC option, refer to the **Avenue PC Remote Configuration** section of this document.

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

For monitoring the parameters remotely using the Avenue Express Control Panel option, refer to the **Avenue Avenue Express Panel** data pack that accompanies the option.

### Front Panel Controls and Indicators

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



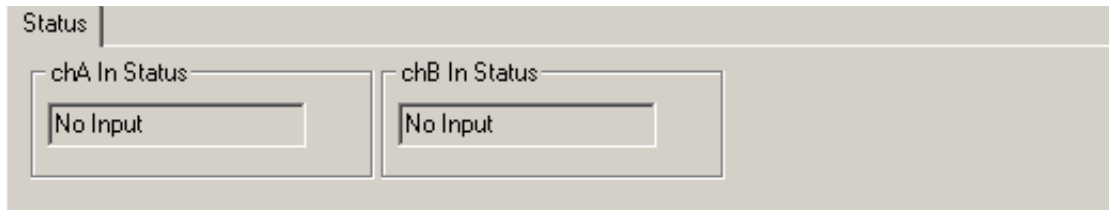
## Avenue PC Remote Configuration

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

### 7125 Avenue PC Menu

The **Status** menu screen shown below gives the following status information about the module:

- **Input Status** – indicates the status of the module input as **No Input**, **SD In**, or **HD In**. (No indication is provided for ASI)



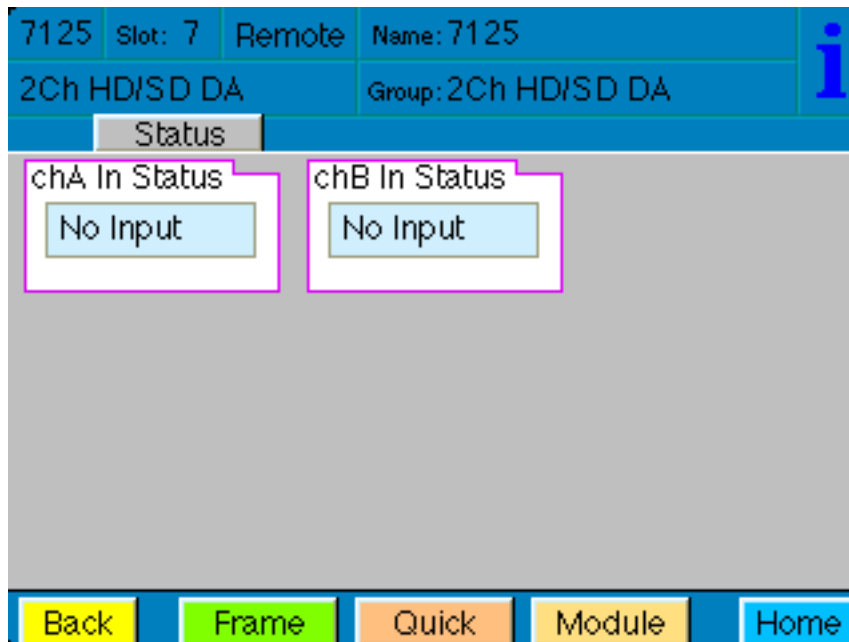
## Avenue Touch Screen Remote Configuration

The Avenue Touch Screen remote control status menu for this module is illustrated and explained below. For more information on using Avenue Touch Screen, refer to the **Avenue System Overview**.

### 7125 Avenue Touch Screen Menu

The **Status** menu screen shown below gives the following status information about the module:

- **Input Status** – indicates the status of the module input as **No Input**, **SD In**, or **HD In**. (No indication is provided for ASI)





## TROUBLESHOOTING

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

The following status items can be monitored using the Avenue Touch Screen Control Panel, Express Panel, or PC Application:

- Input Status
- Slot ID, Software Version and Board Revision

Refer to the overall troubleshooting tips given below for the 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 **SD In** or **HD In** green LEDs. One should be lit. If not, check the input signal for presence and quality.
- Check cabling to input of module.

You may also refer to the technical support section of the Ensemble web site for the latest information on your equipment at the URL below:

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

## 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 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@ensembledesigns.com

<http://www.ensembledesigns.com>

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

## SPECIFICATIONS

### 7125 SD/HD/ASI Reclocking DA

#### Serial Digital Input

Number	Two
Type	HD Serial Digital 1.485 Gb/s SMPTE 274M or 296M or SD Serial Digital 270 Mb/s SMPTE 259M or DVB-ASI 270Mb/s
Impedance	75 $\Omega$
Return Loss	>15 dB
Max Cable Length	100 Meters
270 Mb/s	300 Meters (Belden 1694A or equiv.)
1.485 Gb/s	100 Meters (Belden 1694A or equiv.)

#### Serial Digital Output

Number	Eight (SD, HD) or Four (ASI)
Type	Follows input
Impedance	75 $\Omega$
Return Loss	>15 dB
Output DC	None (AC coupled)

#### General Specifications

Power Consumption	<7.0 watts
Temperature Range	0 to 40° C ambient (all specs met)
Relative Humidity	0 to 95% non-condensing
Altitude	0 to 10,000 ft.