

# Model 7100 High Definition Reclocking DA Data Pack

**ENSEMBLE**  
DESIGNS

Revision 2.1 SW v1.1.0

This data pack provides detailed installation, configuration and operation information for the **7100 High Definition Reclocking 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

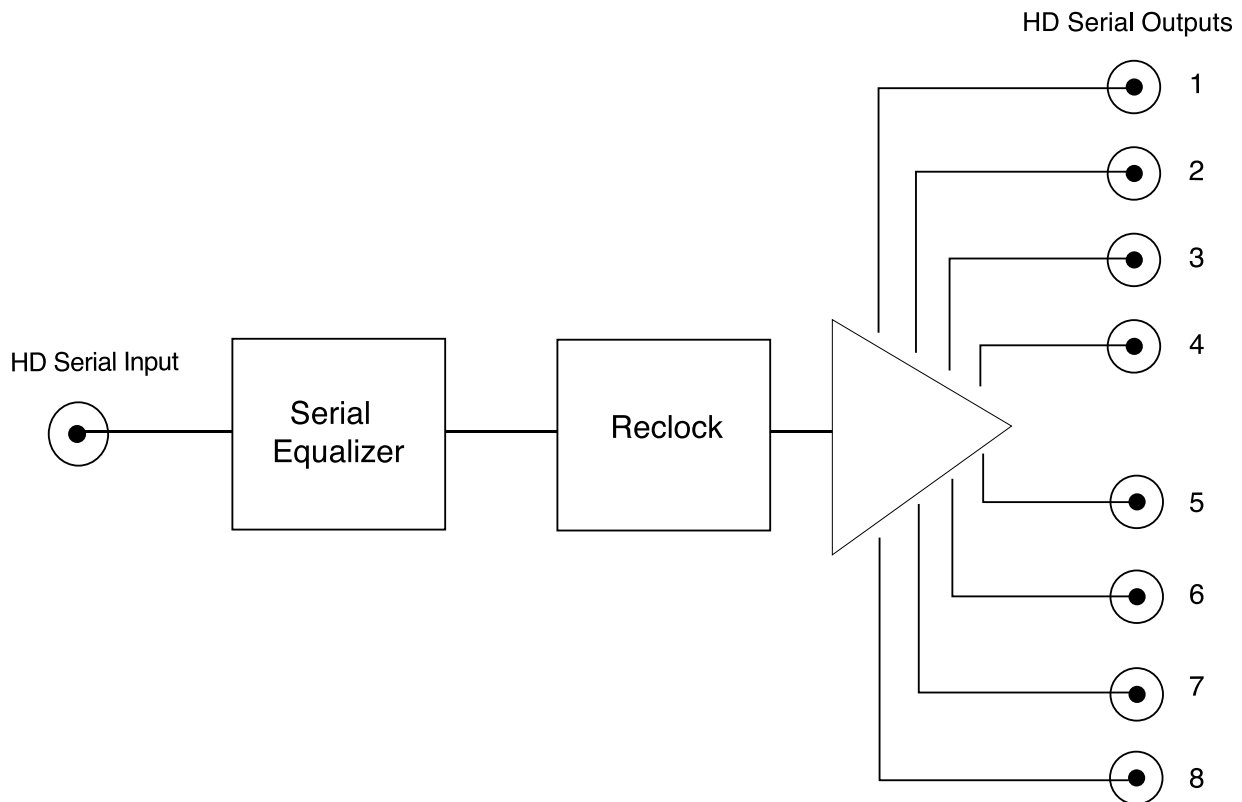
The 7100 module is a high definition reclocking distribution amplifier (DA) providing eight serial digital HD video outputs. Auto equalization is provided for up to 100 meters of cable. The 7100 module can reside in the same frame as SD and HD modules in any combination.

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 passes to an HD 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 eight outputs to the rear BNCs for distribution.

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), equalization (cable length), 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.



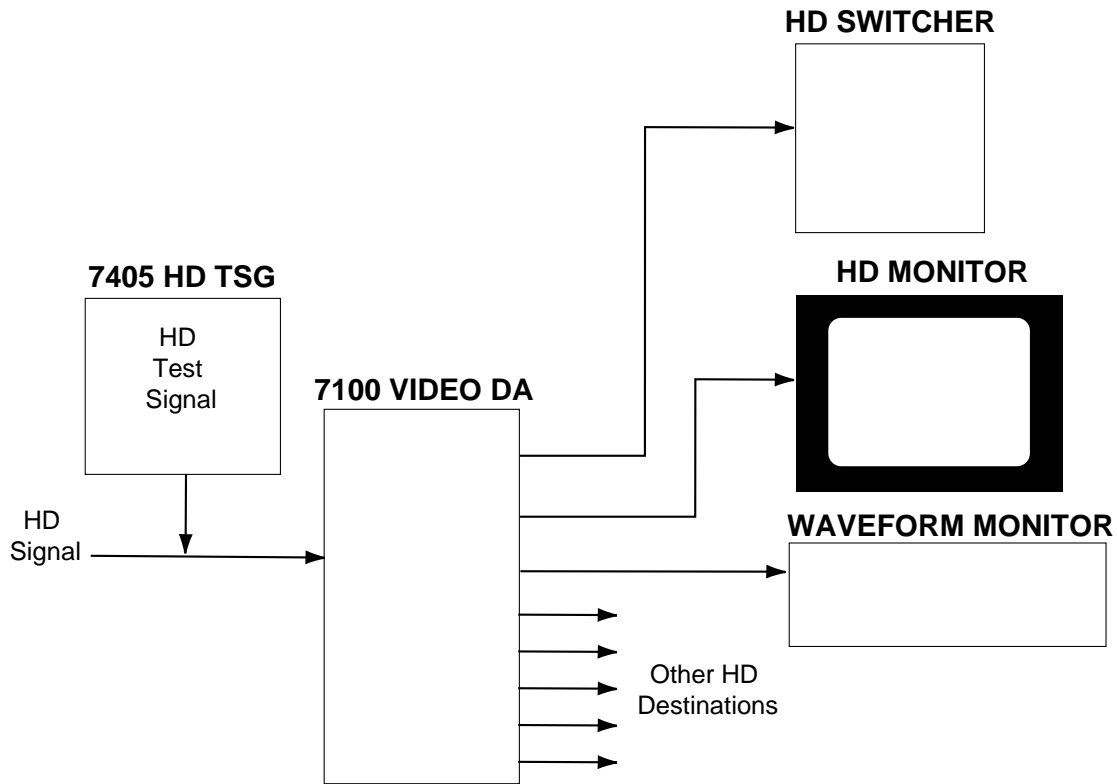
7100 High Definition Reclocking DA Functional Block Diagram

## APPLICATIONS

### High Definition Distribution

The 7100 module can be utilized to distribute one serial HD input to eight destinations. Some typical uses, such as distribution to an HD monitor, waveform monitoring equipment, and switcher inputs, are shown in the block diagram below.

In addition, the 7100 module can also provide distribution of a calibrated high definition signal throughout the facility from a 7405 HD Test Signal Generator when required.



7100 HD Reclocking DA Application

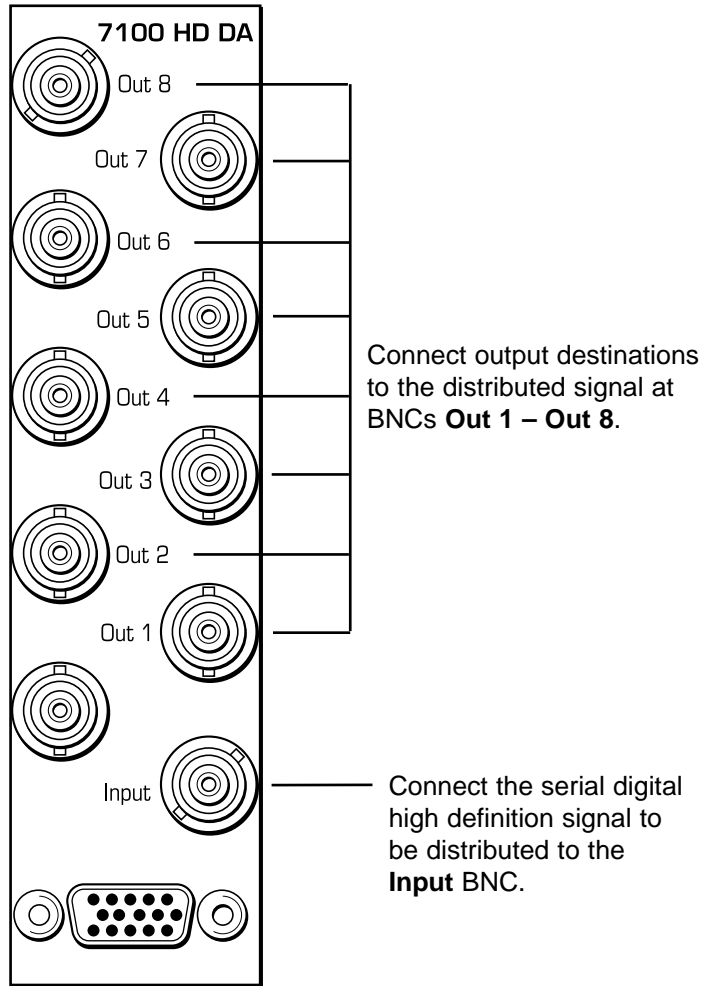
## **INSTALLATION**

Plug the 7100 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.

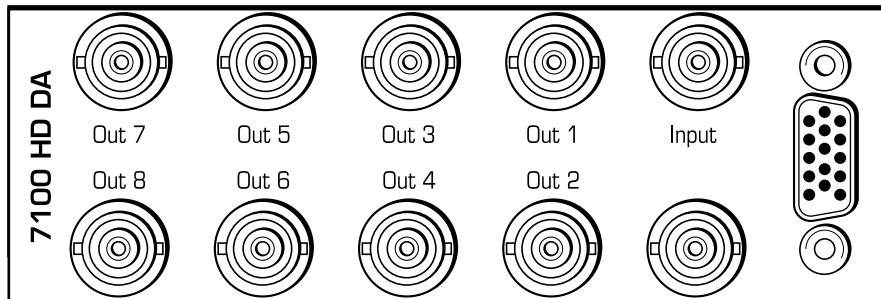
## **CABLING**

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



1 RU Backplane



## MODULE CONFIGURATION AND CONTROL

There are no configuration parameters that require setting on the 7100 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. The 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.

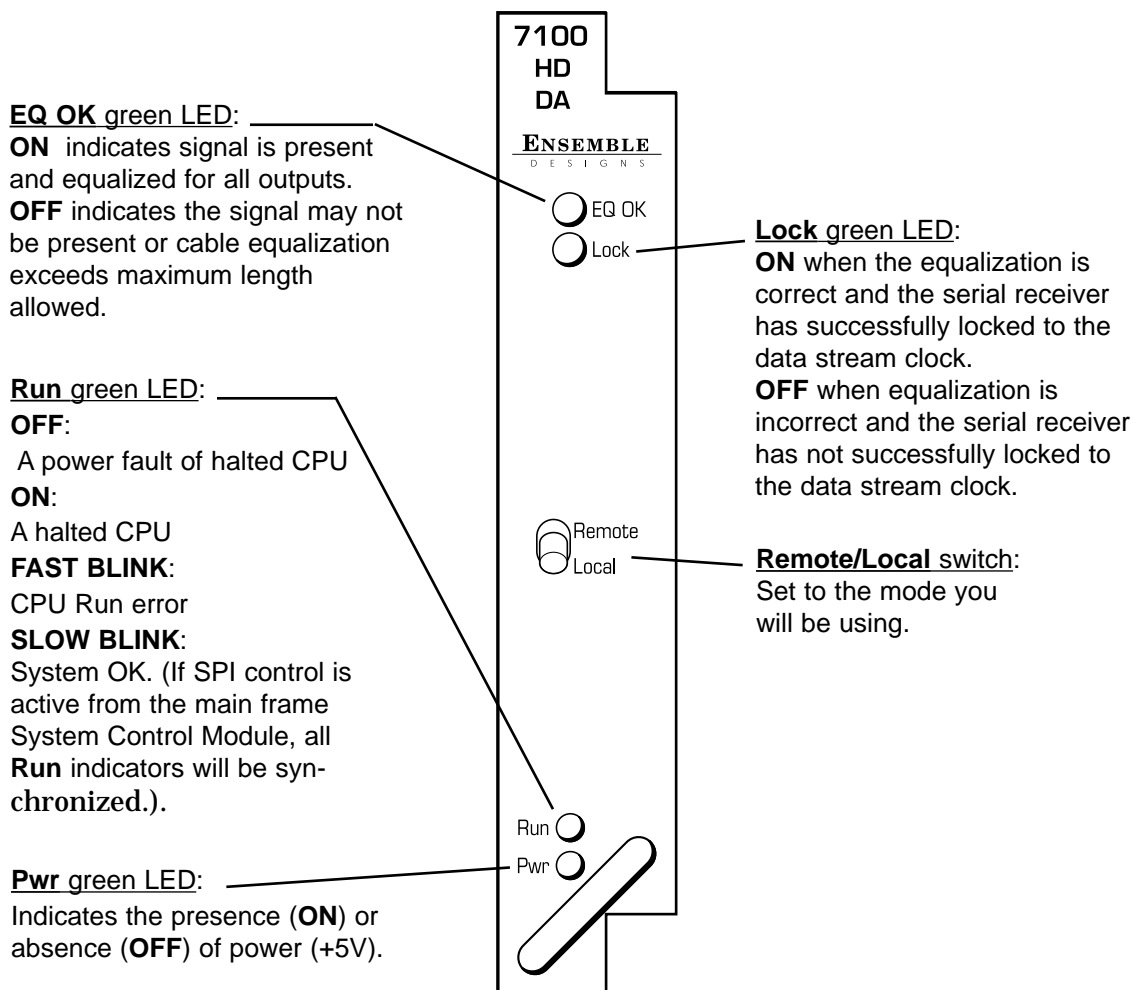
If you are not using a remote control option, the module status can be monitored from the front panel switches illustrated in the **Front Panel Control and Indicators** section below.

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.

### Front Panel Controls and Indicators

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



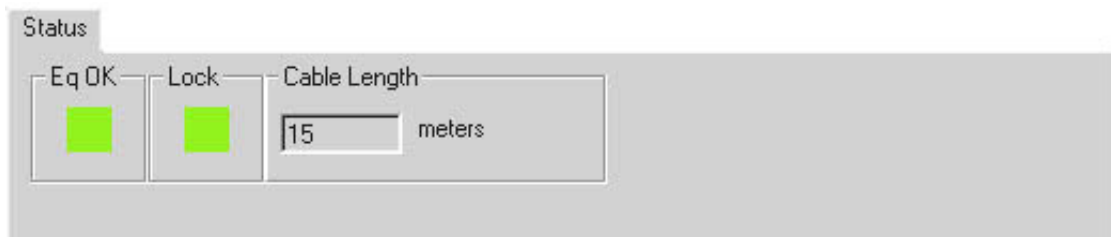
## Avenue PC Remote Configuration

The Avenue PC remote control 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 came with the option.

### 7100 Avenue PC Menu

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

- **Eq OK** – green when signal is present and equalized for all outputs.
- **Lock** – green when module is locking to data stream clock.
- **Cable Length** – indicates current cable length being equalized.



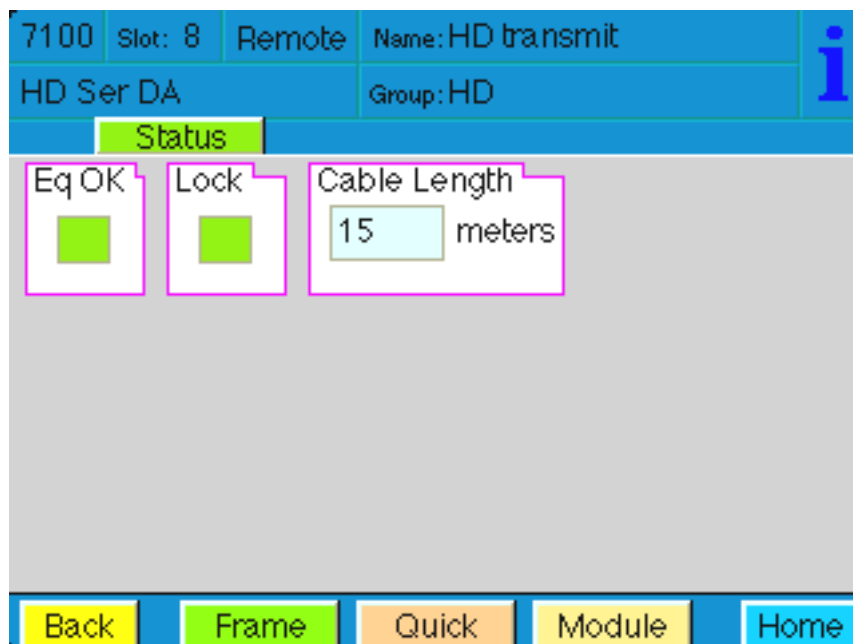
## Avenue Touch Screen Remote Configuration

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

### 7100 Avenue PC Menu

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

- **Eq OK** – green when signal is present and equalized for all outputs.
- **Lock** – green when module is locking to data stream clock.
- **Cable Length** – indicates current cable length being equalized.





## 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 **Front Panel Switches and Indicators** 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)
- Lock Status to data stream clock
- Power 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 **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 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@endes.com

<http://www.ensembledesigns.com>

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

## **SPECIFICATIONS**

### **7100 HD Reclocking DA**

#### **Input Signal Description:**

Number: One  
Signal Type: Serial Digital HD (SMPTE 274M and 296M)  
Impedance: 75  $\Omega$   
Return Loss: >15 dB, DC to 1.5 GHz  
Maximum Cable Length: 100 meters of digital cable (1694A)

#### **Output Signal Description**

Number: Eight  
Signal Type: Serial Digital HD (SMPTE 274M and 296M)  
Impedance: 75  $\Omega$   
Return Loss: >15 dB, DC to 1.5 GHz  
Output DC: None (AC coupled)

#### **General Specifications**

Power Consumption: < 7.0 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.

