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REVISION HISTORY

<u>REVISION</u>	<u>DESCRIPTION</u>	<u>DATE</u>
1.0	Original Version	Sept 00
1.1	Updated Spec on SMPTE 310M	Jan 02
1.2	Removed references to 7700DA10-N	Feb 02

1. OVERVIEW

The 7700DA10 Serial Digital Distribution Amplifier provides an economical method of distribution for your SMPTE 259M (143 $\Rightarrow$ 540 Mb/s) serial digital signals. The 7700DA10 has one auto-equalized input and ten reclocked outputs.

The 7700DA10 has been designed to be used primarily as a reclocking SMPTE 259M or DVB-ASI distribution amplifier and converter, however SMPTE 310M (19.4 Mb/s) signals can also be reclocked.

Features:

- Normal mode for SMPTE 259M (143 $\Rightarrow$ 540 Mb/s) or DVB-ASI signals - autodetects correct bitrate
- Jumper Selectable mode for SMPTE 310M (19.4 Mb/s)
- Fully hot-swappable from front of frame with no BNC disconnect required
- Independent isolated output drivers to ensure no cross channel loading effects
- 6 outputs maintain polarity from input to output for DVB-ASI applications.
- Tally output on Frame Status bus upon loss of input signal

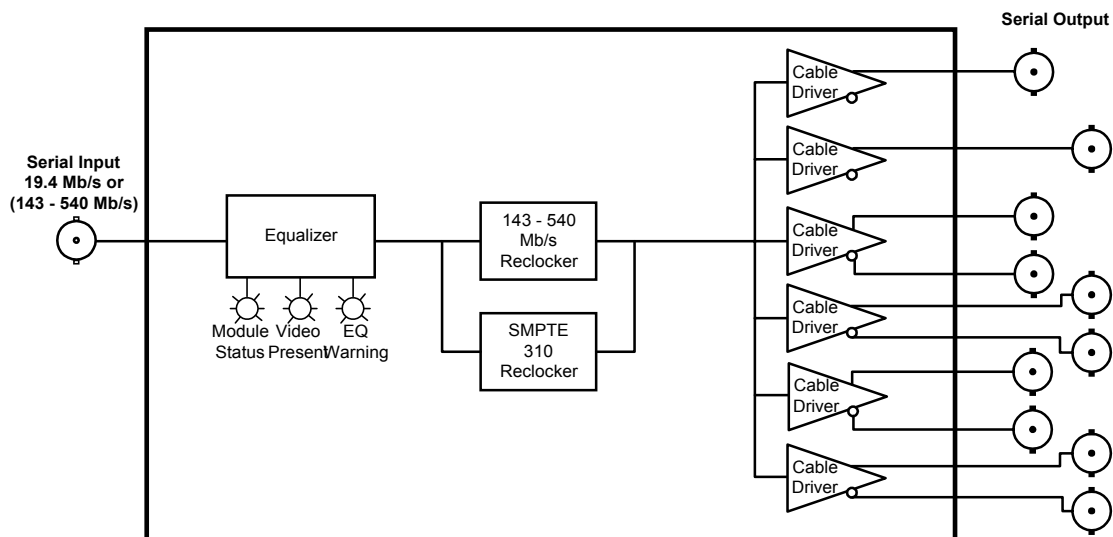


Figure 1: 7700DA10 Block Diagram

2. INSTALLATION

The 7700DA10 comes with a companion rear plate that has 11 BNC connectors. For information on mounting the rear plate and inserting the module into the frame see the 7700FR chapter section 3.

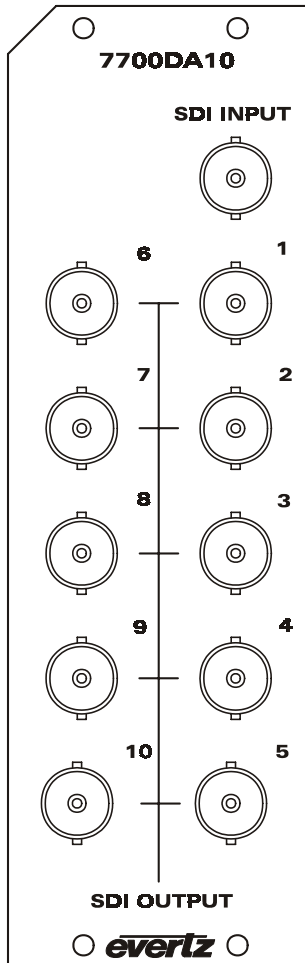


Figure 2: 7700DA10 Rear Panel

SDI INPUT Input BNC connector for 10-bit serial digital video signals compatible with the SMPTE 259M, DVB-ASI or SMPTE 310M standard. See section 5.1 for information on choosing the correct video standard.

SDI OUTPUT There are ten BNC connectors with reclocked serial component video outputs, compatible with the SMPTE 259M / DVB-ASI, or SMPTE 310M standard. Outputs 1, 2, 4, 6, 7 and 9 maintain the same polarity as the input and are DVB-ASI compliant.

3. SPECIFICATIONS

3.1. SERIAL VIDEO INPUT

Standards:

7700DA10:

259 Mode: SMPTE 259M A, B, C, D (143 to 540 Mb/s) or DVB-ASI

310 Mode: SMPTE 310M (19.4 Mb/s)

Connector: 1 BNC per IEC 169-8

Equalization: Automatic to 300m @ 270 Mb/s with Belden 8281 or equivalent cable

Return Loss: > 15 dB up to 540 Mb/s

3.2. SERIAL VIDEO OUTPUTS

Number of Outputs: 10 Reclocked

Connector: BNC per IEC 169-8

Signal Level: 800mV nominal

DC Offset: 0V $\pm$ 0.5V

Rise and Fall Time: 470ps nominal

Overshoot: <10% of amplitude

Return Loss: > 15 dB up to 540 Mb/s

Wide Band Jitter: < 0.2 UI

3.3. ELECTRICAL

Voltage: + 12VDC

Power: 6 Watts

EMI/RFI: Complies with FCC Part 15 Class A, EU EMC Directive

3.4. PHYSICAL

7700 or 7701 frame mounting:

Number of slots: 2

Stand Alone Enclosure:

Dimensions: 14 " L x 4.5 " W x 1.9 " H
(355 mm L x 114 mm W x 48 mm H)

Weight: approx. 1.5 lbs. (0.7 Kg)

4. STATUS LED'S

- MODULE OK:** This Green LED will be On when the module is operating properly
- LOCAL FAULT:** This Red LED will be On when the cable length warning is active or when there is a fault in the module power supply.
- CARRIER PRESENT:** This Green LED will be On when there is a valid signal present at the module input.
- CABLE LENGTH WARNING:** This Yellow LED will be On when the cable equalizer detects that the cable length is greater than a preset threshold (factory set for 250 meters of Belden 8281 or equivalent cable). See section 5.3 for information on adjusting the cable equalizer warning threshold.

5. JUMPERS AND USER ADJUSTMENTS

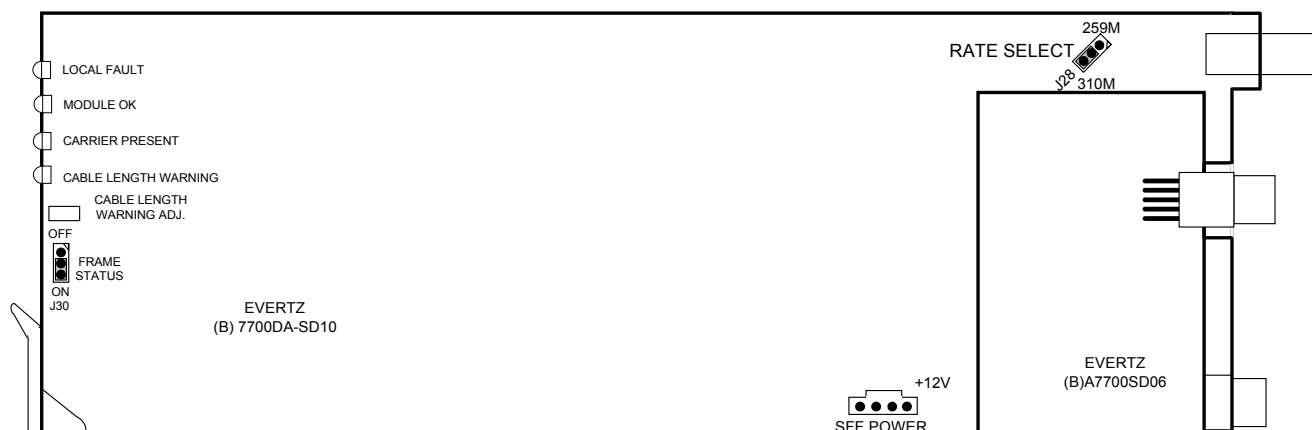


Figure 3: Jumper Locations

5.1. SELECTING THE VIDEO STANDARD

The RATE SELECT jumper J28, located at the top rear of the module on the bottom board, determines whether the module will operate as a reclocking distribution amplifier with SMPTE 259M (143 to 540 Mb/s) or DVB-ASI video signals or with SMPTE 310M (19.4 Mb/s) signals

- RATE SELECT:** To set the module to operate with SMPTE 259M or DVB-ASI signals install the jumper in the 259M position.
- To set module to operate with SMPTE 310M signals install the jumper in the 310M position.

5.2. SELECTING WHETHER LOCAL FAULTS WILL BE MONITORED BY THE GLOBAL FRAME STATUS

The FRAME STATUS jumper J30, located at the front of the module determines whether local faults (as shown by the Local Fault indicator) will be connected to the 7700FR frame's global status bus.

FRAME STATUS: To monitor faults on this module with the frame status indicators (on the power supply's FRAME STATUS LED's and on the Frame's Fault Tally output) install this jumper in the On position.

When this jumper is installed in the Off position local faults on this module will not be monitored.

5.3. SETTING THE EQUALIZER WARNING THRESHOLD

The EQ trimpot R39 is used to set the threshold of the cable equalizer warning. The equalizer warning is factory set to 250 meters of Belden 8281 cable, but may be adjusted for other cable types or cable lengths. To adjust the cable equalizer warning threshold, connect a signal to the input of the DA10 using the required length of cable. Adjust the trimpot slowly until the Equalizer warning LED comes on. You can verify that the equalizer warning is operating correctly by removing a few meters of cable from the input. The LED should go off.

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