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REVISION HISTORY

REVISION	DESCRIPTION	DATE
1.0	Preliminary Version	May 01
1.1	Revised for DS3 only product	Oct 01

1. OVERVIEW

The 7700DA-DS3 Distribution Amplifier provides automatic coaxial cable equalization, reclocking and signal distribution of DS3 (44.736 Mb/s) telecommunications signals. The 7700DA-DS3 accepts a B3ZS-encoded Alternate Mark Inversion (AMI) input signal and provides four reclocked G.703 compliant output signals.

The 7700DA-DS3 occupies one card slot and can be housed in either a 1RU frame that will hold up to three modules or a 3 RU frame that will hold up to 15 modules.

Features:

- Automatic cable equalization for up to 1000ft of high quality 75 Ohm cable
- Signal reclocking and jitter attenuation functions
- Output wave shaping for G.703 standards compliance
- Loss of signal (LOS) detection/indication (ANSI T1.231-1999 and ITU G.775)
- Outputs 1010 pattern generation upon loss of input signal
- Electrical output drive level control for enhanced distance
- Transformer coupled inputs/outputs

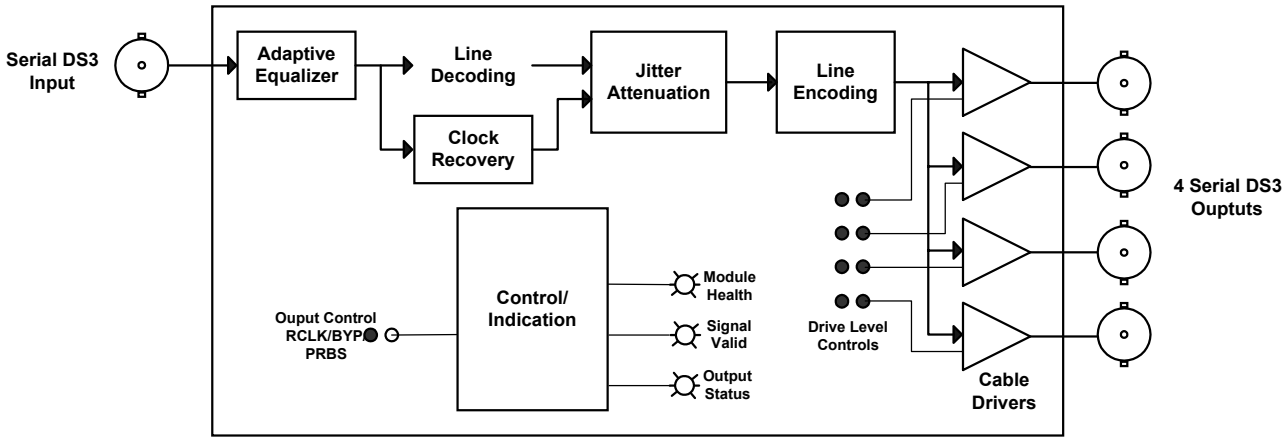

Figure 1: 7700DA-DS3 Block Diagram

2. INSTALLATION

The 7700DA-DS3 comes with a companion rear plate that has 5 BNC connectors. For information on mounting the rear plate and inserting the module into the frame see the 7700FR chapter section 3.

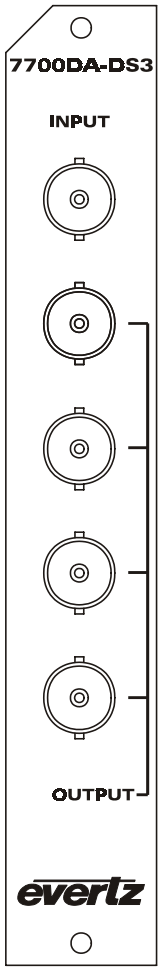

Figure 2: 7700DA-DS3 Rear Panels

INPUT Isolated input BNC for DS3 (44.736 Mb/s) signals. This input is also transformer coupled to meet G.703 requirements. A jumper is available on the main board, to allow the isolated BNC shield to be connected to DC ground or AC ground.

OUTPUT There are four BNC connectors with transformer coupled, reclocked outputs. The output drive levels for each output are independently jumper selectable for driving different cable lengths.

3. SPECIFICATIONS

3.1. INPUTS

Standards: G.703 @ 44.736 Mb/s
Connector: 1 BNC input per IEC 169-8
Equalization: Automatic 300m with Belden 8281 or equivalent cable
Return Loss: > 20 dB up to 44 Mb/s

3.2. OUTPUTS

Number of Outputs: 4 Per Card-Reclocked.
Connector: BNC per IEC 169-8
Waveform: conforms to G.703 compliant masks
Return Loss: > 15 dB up to 44.736 Mb/s
Drive Level:
High: For driving cable lengths < 225 feet
Low: For driving cable lengths > 225 feet

3.3. ELECTRICAL

Voltage: + 12VDC
Power: 6 Watts.
EMI/RFI: Complies with FCC regulations for class A devices.
Complies with EU EMC directive.

3.4. PHYSICAL

Number of slots: 1

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 Signal Valid is Off, or Output Fault On or when there is a fault in the module power supply.

SIGNAL VALID This Green LED will be On when the input signal satisfies amplitude requirements.

OUTPUT FAULT This Red LED will be On when an output fault or output connection error exists.

5. JUMPERS AND USER ADJUSTMENTS

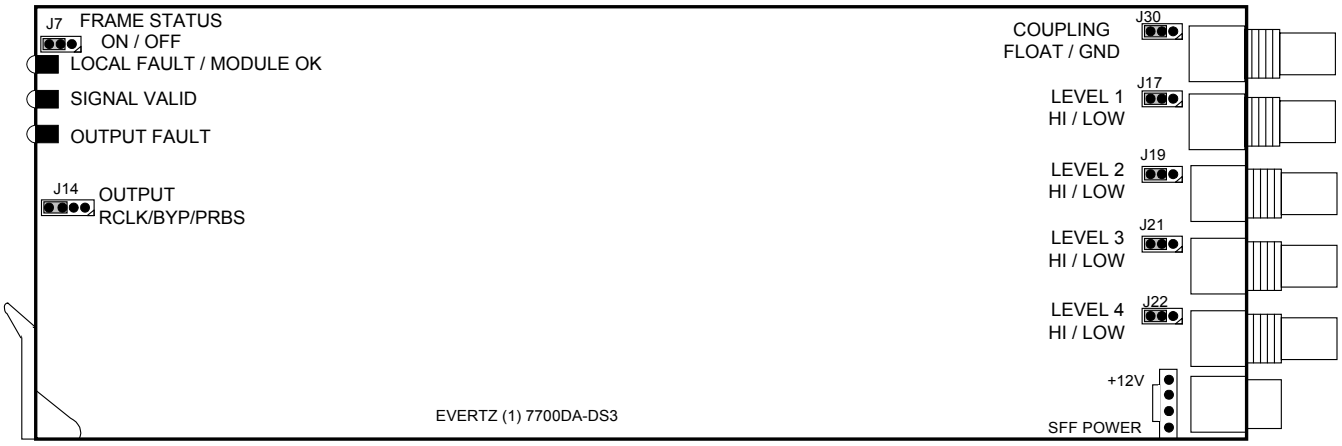

Figure 3: Jumper Locations

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

The FRAME STATUS jumper J7, located at the top 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 FRAME STATUS LED's and on the Frame's Fault Tally output) install this jumper in the On position (default). When this jumper is installed in the Off position local faults on this module will not be monitored.

5.2. SELECTING THE OUTPUT MODE

The OUTPUT jumper J14, located on the center front of the module, is a three position jumper that sets the output mode of the DA.

OUTPUT To select the normal reclocking mode set the jumper to the **RCLK** position (default). This provides signal reclocking for the DS3 signal. The output defaults to an 'all ones' pattern on loss of input signal.

To bypass signal reclocking set the jumper to the **BYP** position. This position is useful for performing system diagnostics.

Set the jumper to the **PRBS** position to output an 'all ones' test pattern for additional diagnostics testing.

5.3. SELECTING THE INPUT ISOLATION MODE

The COUPLING jumper J30, located at the rear of the module beside the input BNC, is a two position jumper that sets whether the shield of the input BNC connector will be AC or DC coupled to ground. Figure 4 shows a schematic of the input configuration.

COUPLING When set to the **GND** position, the shield of the input BNC will be connected directly to the logic ground of the DA.

When set to the **FLOAT** position, the shield of the input BNC will be AC coupled to the logic ground of the DA.

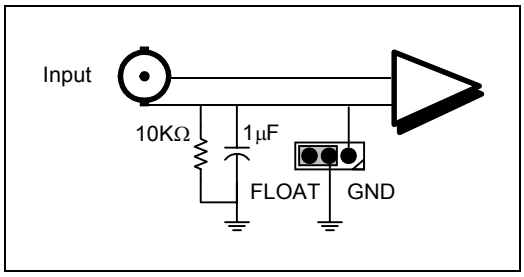

Figure 4: Input Isolation Jumper

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5.4. SETTING THE TRANSMIT LEVEL

The four LEVEL jumpers, J17, J19, J21 and J22 located at the rear of the module beside the four output BNCs, set the transmit level for the signal on the adjacent BNC output connector.

LEVEL When the cable length connected to the output is less than 225 feet (68.5 meters) set the jumper to the **LOW** position in order to meet the DSX-3 pulse specification.

When the cable length connected to the output is greater than 225 feet (68.5 meters) set the jumper to the **HIGH** position in order to meet the DSX-3 pulse specification.

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