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REVISION HISTORY

REVISION	DESCRIPTION	DATE
1.0	Original Version	May 01

1. OVERVIEW

The 7700DA-AES provides an economical method of distribution for your AES digital audio signals. The DA's feature one auto-equalized input with five re-clocked outputs. The DA's come in two versions.

Model	Description
7700DA-AESU	DA for unbalanced (75 Ω) AES
7700DA-AESB	DA for balanced (110 Ω) AES

Features:

- Unbalanced version supports SMPTE 276M standard for AES audio on 75 Ω coax
- Balanced version supports AES3-1992 standard for AES audio on 110 Ω twisted pair cable
- Transformer coupled inputs (selectable Hi-Z)
- 5 reclocked outputs provides jitter reduction
- Automatic equalization provides extended cable length capabilities
- Card edge indicators for PLL out of lock, parity error or bi-phase coding errors
- Tally output of input error conditions

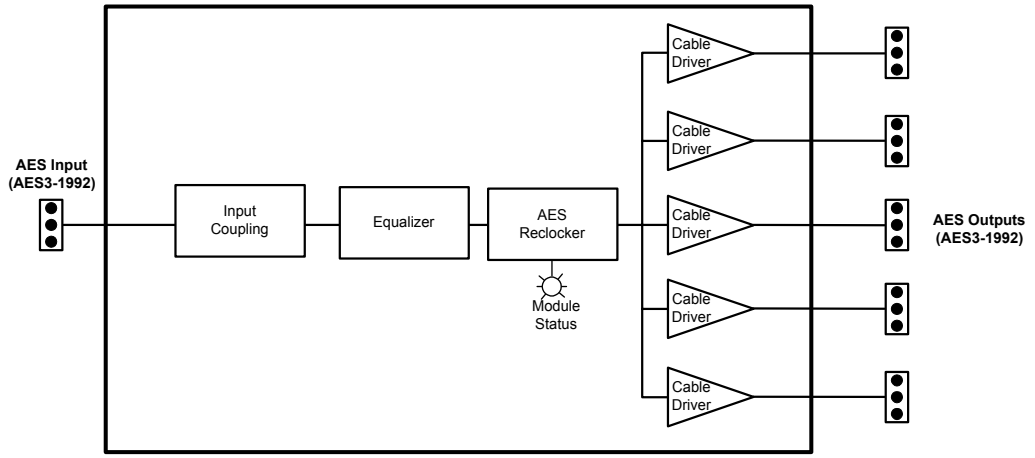

Figure 1: 7700DA-AESB Block Diagram

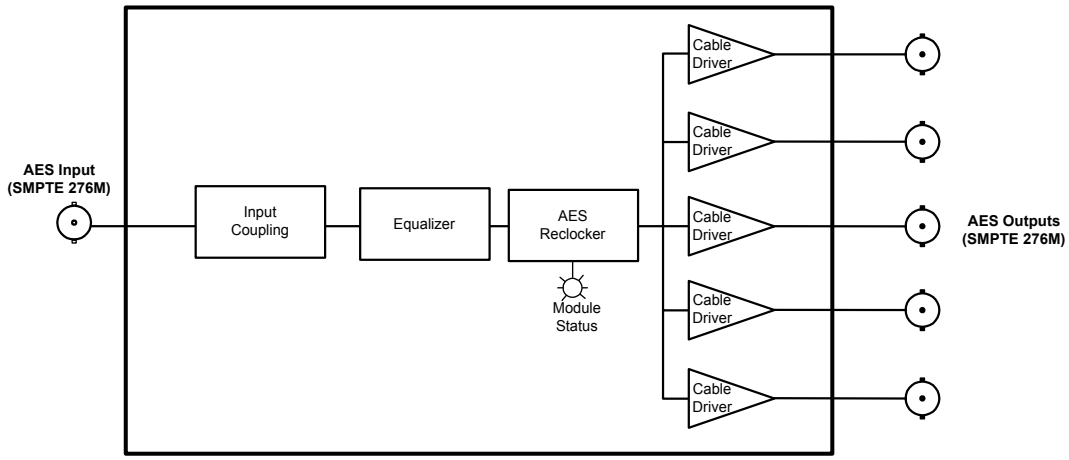

Figure 2: 7700DA-AESU Block Diagram

2. INSTALLATION

The 7700DA-AESB comes with a companion rear plate that has 6 BNC connectors. The 7700DA-AESU comes with a companion rear plate that has 6 terminal block connectors. For information on mounting the rear plate and inserting the module into the frame see the 7700FR chapter section 3.

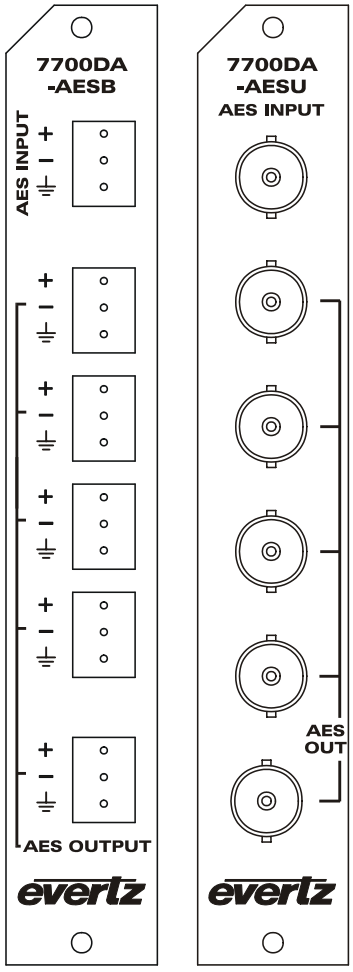

Figure 3: 7700DA-AES Rear Panels

2.1. UNBALANCED AES CONNECTIONS (7700DA-AESU)

AES INPUT Input BNC connector for unbalanced AES audio signals compatible with the SMPTE 276M standard. The TERM jumper located near the rear of the module determines whether the input signal will be high impedance or terminated with 75 ohms. (See section 5.1)

AES OUT There are five BNC connectors with reclocked unbalanced AES, compatible with the SMPTE 276M.

2.2. BALANCED AES CONNECTIONS (7700DA-AESB)

The input and output audio cables can be secured into the removable portion of the terminal strips using a small screwdriver. The removable part of the terminal strip is then inserted into the rear panel.

AES INPUT Input 3 pin terminal strip for balanced AES audio signals compatible with the AES3-1992 standard. The TERM jumper located near the rear of the module determines whether the input signal will be high impedance or terminated with 110 ohms. (See section 5.1)

AES OUTPUT There are five 3 pin terminal strips with reclocked unbalanced AES, compatible with the SMPTE 276M.

3. SPECIFICATIONS

3.1. UNBALANCED AES AUDIO INPUTS (7700DA-AESU)

Number of Inputs: 1
Standard: SMPTE 276M, single ended AES
Connectors: BNC per IEC 169-8
Coupling: Transformer
Signal Level: 1V p-p ±0.1V
Equalization: Automatic 1500m @48KHz with Belden 1694A or equivalent cable
Impedance: 75 Ohms (Hi-Z jumper selectable)
Return Loss: >25 dB 100 kHz to 6 MHz
Sampling Rate: 32 KHz, 44.1 kHz, 48 kHz and 96 kHz

3.2. UNBALANCED AES AUDIO OUTUTS (7700DA-AESU)

Number of Outputs: 5 reclocked
Standard: SMPTE 276M, single ended AES
Connectors: BNC per IEC 169-8
Signal Level: 1V p-p ±0.1V
Impedance: 75 Ohms unbalanced
Return Loss: >25 dB 100 kHz to 6 MHz

3.3. BALANCED AES AUDIO INPUTS (7700DA-AESB)

Number of Inputs: 1
Standard: AES3-1992 balanced AES
Connectors: 3 pin terminal strip
Coupling: Transformer
Signal Level: 2 to 7 V p-p
Equalization: Automatic 300m @48KHz with Belden 1800B or equivalent cable
Impedance: 110 Ohms (Hi-Z jumper selectable)
Return Loss: > 14 dB 100 kHz to 6 MHz
Sampling Rate: 32 KHz, 44.1 kHz, 48 kHz and 96 kHz

3.4. BALANCED AES AUDIO OUTPUTS (7700DA-AESB)

Number of Outputs: 5 reclocked
Standard: AES3-1992 balanced AES
Connectors: 3 pin terminal strip
Signal Level: 5V p-p
Impedance: 110 Ohms
Return Loss: > 30 dB 100 KHz to 6 MHz

3.5. ELECTRICAL

Voltage: + 12VDC
Power: 1.8 Watts.
EMI/RFI: Complies with FCC regulations for class A devices.
Complies with EU EMC directive.

3.6. 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 input phase locked loop is out of lock, if there is a parity error, if there is a biphase coding error or when there is a fault in the module power supply.

5. JUMPERS AND USER ADJUSTMENTS

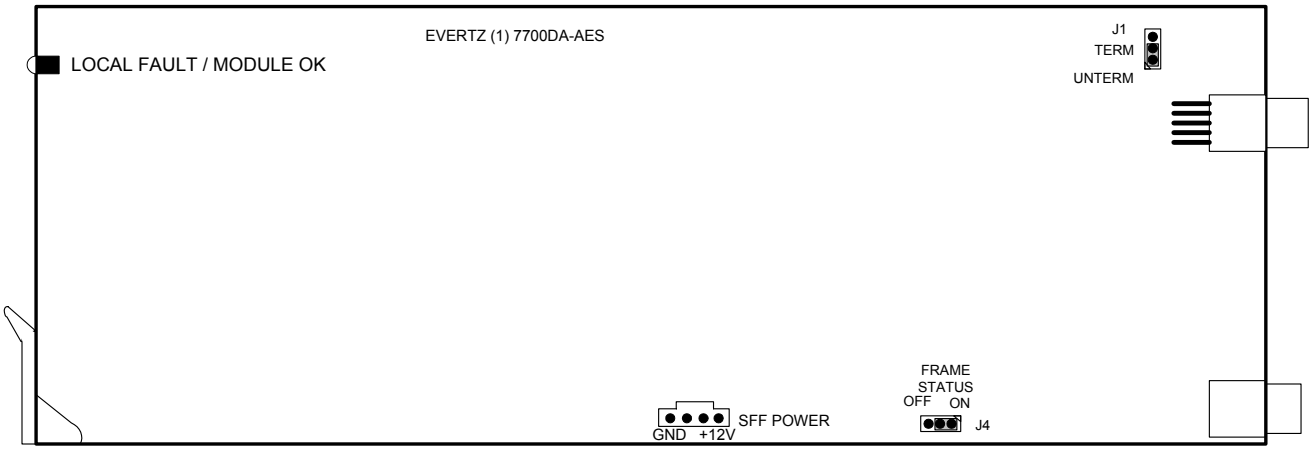

Figure 4: Jumper Locations for 7700DA-AES Cards

5.1. TERMINATION JUMPER

The TERMINATION jumper J1, located at the rear of the module determines whether the input signal will be terminated with or not.

When set in the "TERM" position, (default) the input impedance is set to 75 Ohms for 7700DA-AESU or 110 Ohms for 7700DA-AESB. Use this position when the cable stops at this card. It will provide the proper impedance to eliminate electrical reflections.

If set to "UNTERM", the input will be high impedance. Use this position when the signal does NOT stop at this card. On the 7700DA-AESU install a "T" connector on the INPUT BNC to "loop" the signal through this card. On the 7700DA-AESB connect both input cables to the INPUT terminal strip to "loop" the signal through this card.

WARNING: Make sure that the final destination of the signal is terminated. Otherwise, reflections will occur affecting the signal throughout the cable.

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

The FRAME STATUS jumper J4, located at the rear 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 PS 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.

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