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REVISION HISTORY

REVISION	**DESCRIPTION**	**DATE**
1.0	First Release	Oct 07

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1. OVERVIEW

The 500DA-AESU-L is an eight output re-clocking and auto equalizing DA for unbalanced 75Ω AES with passive loop thru designed for use within the Evertz high-density analog looping frame (500FR-L-A). The DA automatically equalizes up to 1500m of Belden 1694A coax and provides re-clocked outputs with sampling frequencies of 32kHz, 44.1kHz, 48kHz and 96kHz.

The 500DA-AESU-L card edge LED indicators provide quick and accurate assessment of the incoming signal integrity. When installed within the 500FR-L-A, a passive loop output is available to enable cascading of multiple DA cards. The passive loop is implemented on the 500FR-L-A back-plane. As a result, a failure of any single card or the removal of any single card does not affect any other cards being used for signal distribution. Up to sixteen 500DA-AESU-L cards may be cascaded error free in the 500FR-L-A frame. The 500DA-AESU-L is housed in the 3RU 500FR-L-A exponent frame that will hold up to 16 modules.

FEATURES:
- Data re-clocking provides jitter reduction

   Inputs:
   - SMPTE 276M standard for AES audio on 75Ω coax
   - EQ and re-clock provide extended cable length compensation (> 1500m)
   - Transformer coupled 75Ω unbalanced input

   Outputs:
   - Eight 75Ω coax outputs

   Card Edge LEDs:
   - Module Health Status
   - Error LED indication for input PLL out of lock, parity error or bi-phase coding error
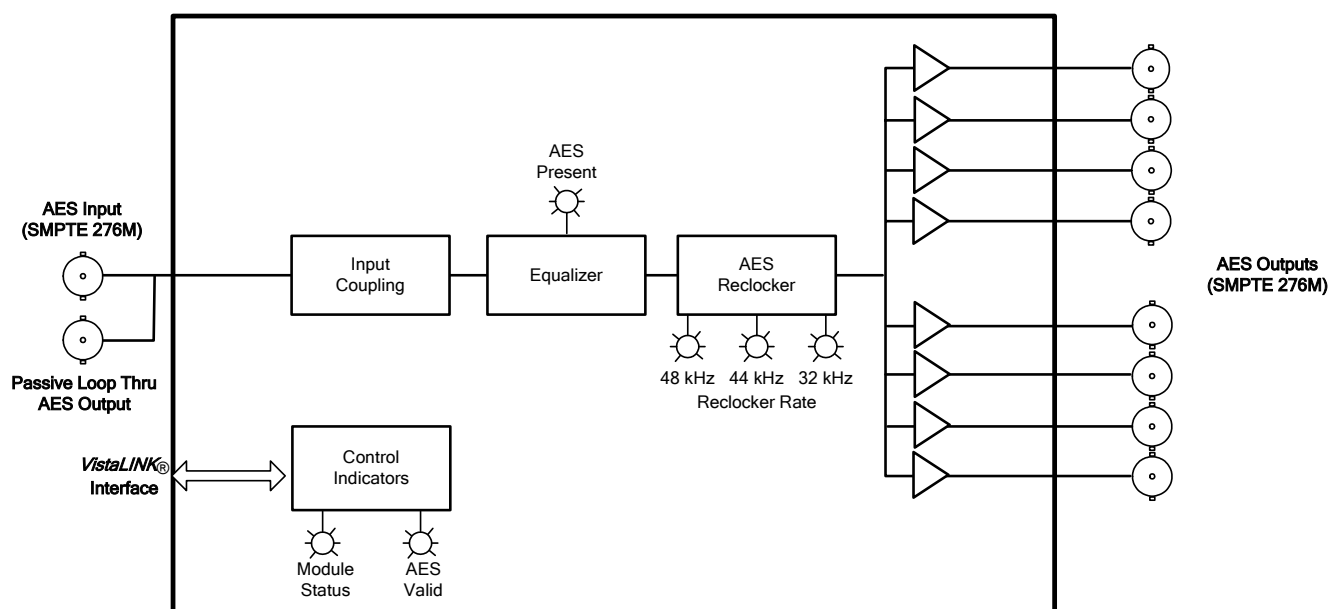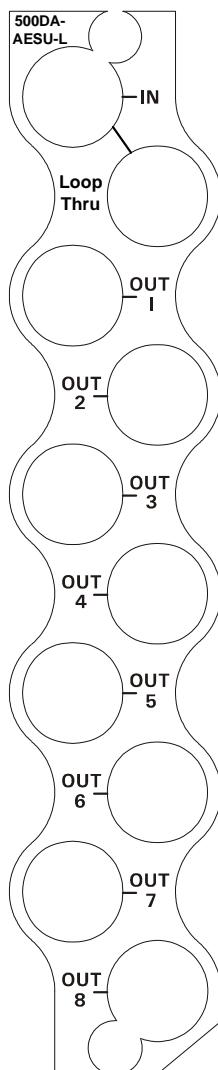   - Re-clocker locked

Figure 1-1: 500DA-AESU-L Block Diagram Installed in 500FR-L-A-Frame

2. INSTALLATION

The 500DA-AESU-L comes with a companion rear panel overlay that can be placed over the rear panel BNC connectors to identify their function. For information on inserting the module into the frame see section 3 of the 500FR chapter.

Figure 2-1: 500DA-AESU-L Rear Panel Overlay

IN   Input BNC connector for unbalanced AES audio signals compatible with the SMPTE 276M standard.

OUT 1 to 8   There are eight BNC connectors with reclocked unbalanced AES, which are compatible with the SMPTE 276M.

3. SPECIFICATIONS

3.1. AES AUDIO INPUTS

Number of Inputs: 1
Standard: SMPTE 276M
Connectors: BNC per IEC 60169-8 Amendment 2
Coupling: Transformer
Input Level: 1V p-p
Equalization: Automatic to 1500m with Belden 1694A (or equivalent) @ 48kHz AES signal
Input Impedance: 75Ω
Return Loss: > 25dB 100kHz to 6MHz
Sampling Frequency: 32kHz, 44.1kHz, 48kHz and 96kHz

3.2. AES AUDIO OUTPUTS

Number of Outputs: 1 passive loop thru, 8 Unbalanced re-clocked AES
Connectors: BNC per IEC 60169-8 Amendment 2
Output Level: 1V p-p
Output Impedance: 75Ω
Return Loss: > 25dB 100kHz to 6MHz

3.3. ELECTRICAL

Voltage: +12V DC
Power: 5W
EMI/RFI: Complies with FCC Part 15 Class A EU EMC Directive

3.4. PHYSICAL

Number of slots: 1

Ordering Information:

500DA-AESU-L   Unbalanced AES Distribution Amplifier (1x8) with Loop Thru

Enclosures:
500FR   Compact High Density Distribution Frame
S501FR   Standalone enclosure

4. STATUS LEDS

The 500DA-AESU-L has seven LED Status indicators on the front card edge to show operational status of the card at a glance. Figure 5-1 displays the location of the LEDs.

Two large LEDs on the front of the board indicate the general health of the module:

LOCAL FAULT: This Red LED indicates poor module health and will be On during the absence of a valid input signal, or if a local input power fault exists (i.e.: a blown fuse). The LOCAL FAULT indication can also be reported to the frame through the FRAME STATUS jumper.

MODULE OK: This Green LED indicates good module health. It will be On when a valid input signal is present and the board power is good.

There are five small LEDs that indicate the status of the input AES audio.

AES PRESENT: This LED will be On when there is an AES carrier present at the input to the module.

48 kHz: The reclocker is currently locked to 48 kHz.

44 kHz: The reclocker is currently locked to 44.1 kHz.

32 kHz: The reclocker is currently locked to 32 kHz.

AES VBIT   This LED indicates the status of the AES validity bit. When the LED is Off it indicates that the AES sample data is suitable for conversion to an analog audio signal. When the LED is On it indicates that the AES sample data is carrying data such as Dolby E and is not suitable for conversion to an analog audio signal.
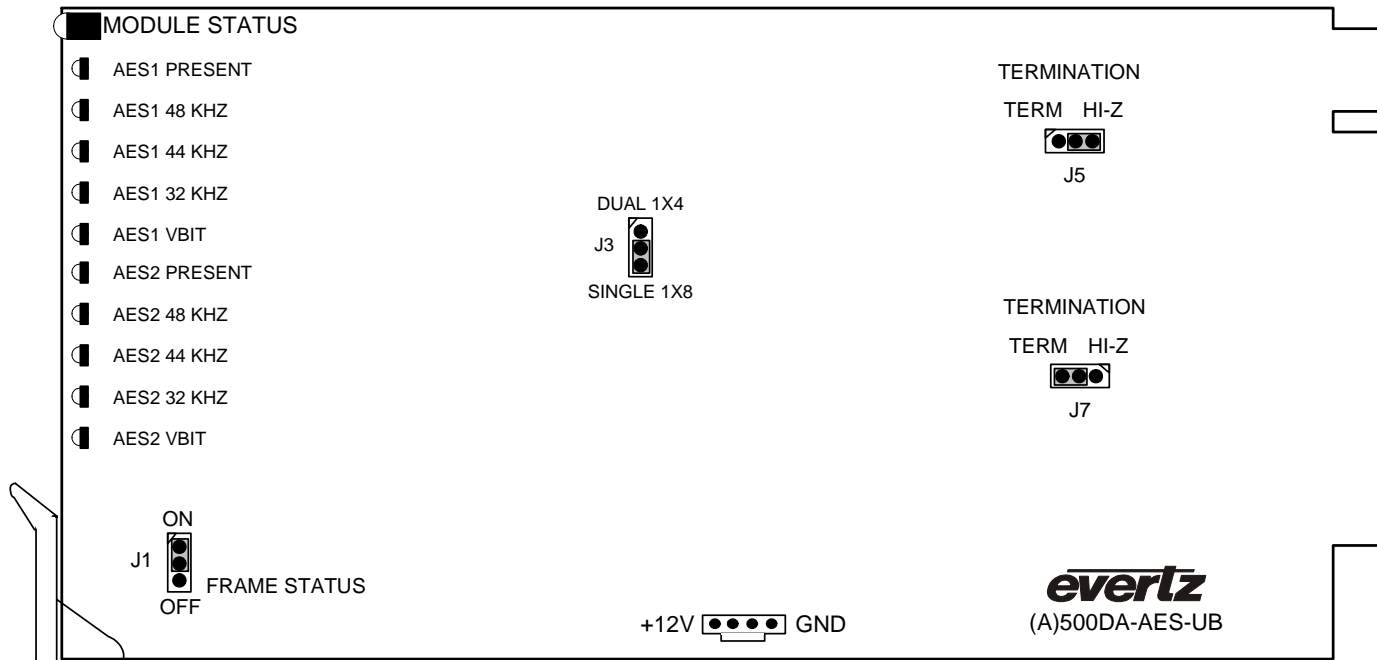
5. JUMPERS AND USER ADJUSTMENTS

Figure 5-1: LED and Jumper Locations

5.1. INPUT TERMINATION JUMPER

The TERMINATION jumper J5, located at the rear of the module, determines whether the input signal will be terminated or not.

TERMINATION   When set in the "TERM" position, (default) the input impedance is set to 75 Ohms. 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. Install a "T" connector on the INPUT BNC to "loop" the signal through this card. The "T" connector is not required when installing the 500DA-AESU-L module within a 500FR-L-A frame.

✎ | **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 J1, located at the front of the module, determines whether local faults (as shown by the Local Fault indicator) will be connected to the 500FR 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.