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REVISION HISTORY

REVISION	DESCRIPTION	DATE
1.0	First Release	Aug 2011

1. OVERVIEW

The 400DA-AESB is a nine output reclocking and auto equalizing DA for balanced 110Ω AES signals. The DA automatically equalizes up to 300m of Belden 1800B cable and provides reclocked outputs with sampling frequencies of 32kHz, 44.1kHz, 48kHz and 96kHz. The 400DA-AESB card edge LED indicators provide quick and accurate assessment of the incoming signal integrity.

The 400ADA-AESB is housed in the 3RU 400FR frame that will hold up to 16 modules.

FEATURES:

- Data reclocking provides jitter reduction

- **Inputs:**
  - AES3-1992 standard for AES audio on 110 Ω twisted pair cable
  - EQ and reclock provide extended cable length compensation (> 300m)
  - Transformer coupled 110 Ω balanced input

- **Outputs:**
  - Nine 110 Ω balanced

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

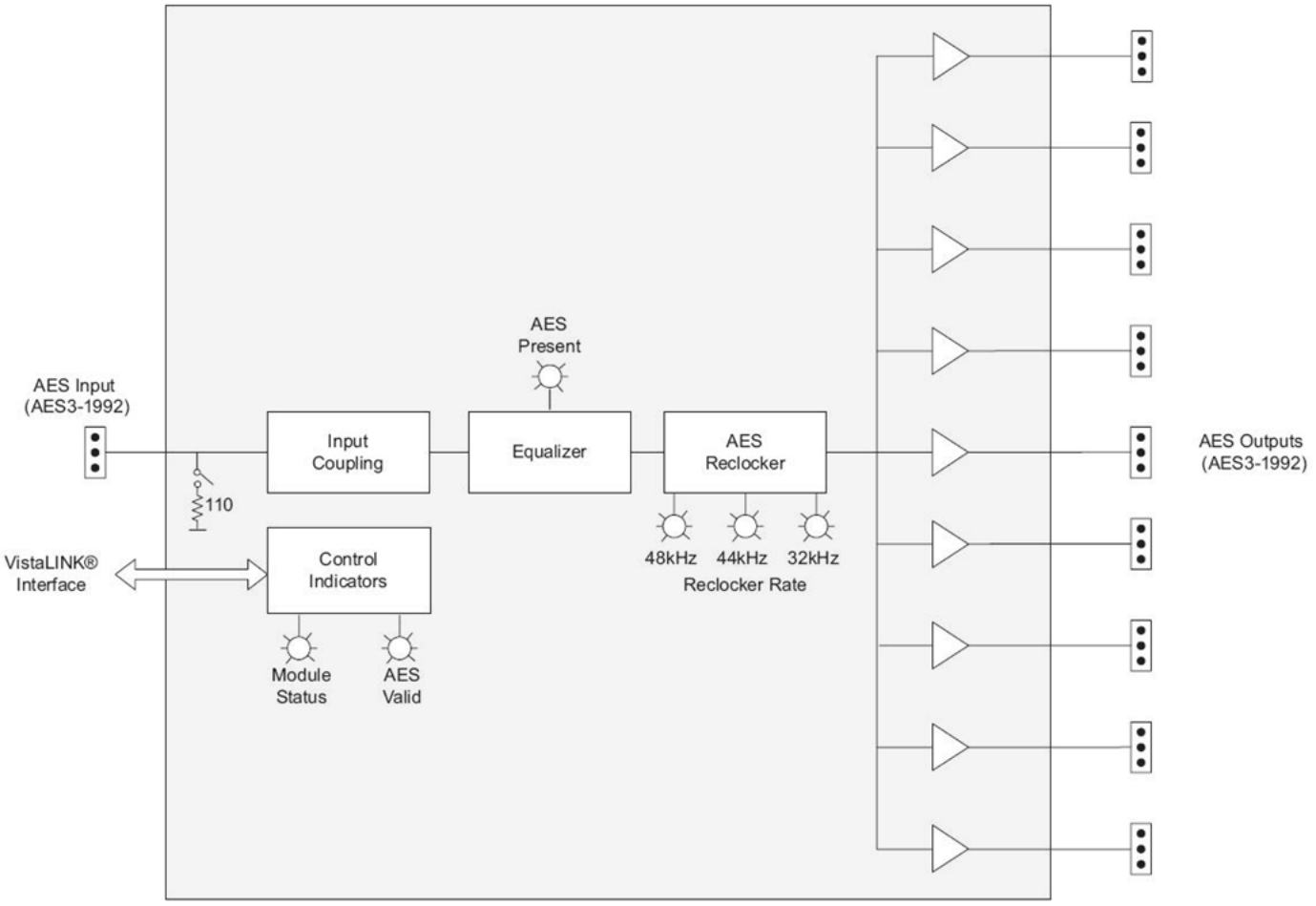

Figure 1-1: 400DA-AESB Block Diagram

2. INSTALLATION

For information on inserting the module into the frame see section 3 of the 400FR chapter.

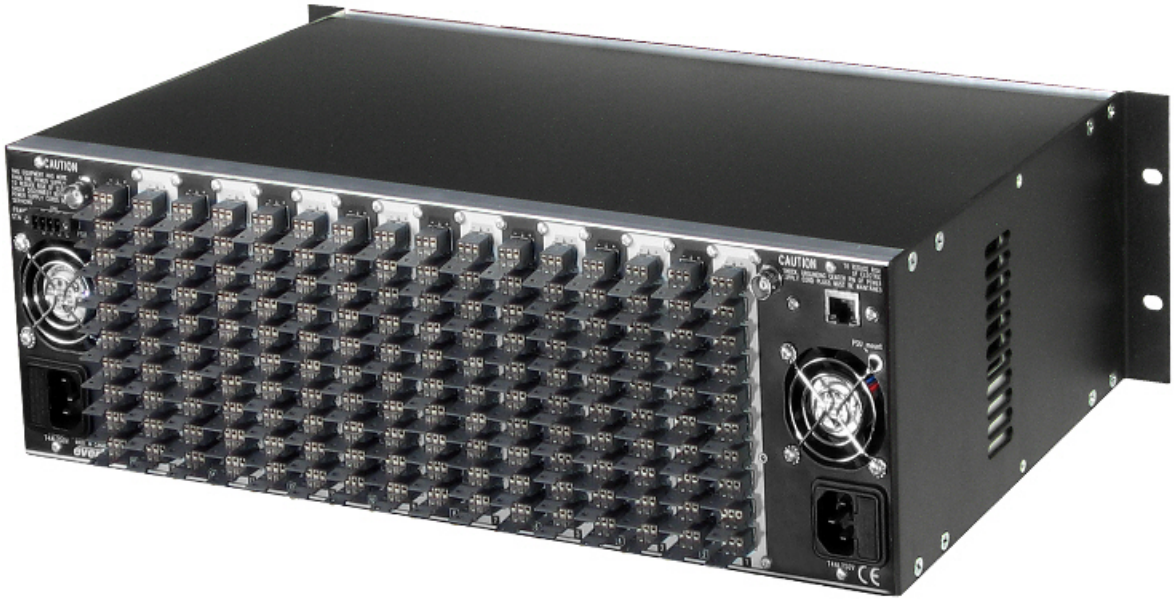

Figure 2-1: 400FR Frame Rear View

The balanced AES 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 terminal strips on the rear panel.

IN: Balanced AES audio input compatible with the AES3-1992 standard. The input (+, -, GND) is on a 3 pin removable terminal strip connector.

OUT 1 to 9: There are four balanced AES audio outputs compatible with the AES3-1992 standard. Each output (+, -, GND) is on a 3 pin removable terminal strip connector.

3. SPECIFICATIONS

3.1. AES AUDIO INPUTS

Standard:	AES3-1992
Number of Inputs:	1
Connector:	3-pin removable terminal strip
Input Level:	2 to 7V p-p
Coupling:	Transformer
Input Impedance:	110Ω
Return Loss:	> 14dB 100kHz to 6MHz
Equalization:	Automatic to 300m with Belden 1800B (or equivalent) @ 48kHz AES signal
Sampling Frequency:	32kHz, 44.1kHz, 48kHz and 96kHz

3.2. AES AUDIO OUTPUTS

Number of Outputs:	9 Balanced AES reclocked
Connector:	3-pin removable terminal strip
Output Level:	5V p-p
Output Impedance:	110 Ω
Return Loss:	> 30dB 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

4. STATUS LEDS

The 400DA-AESB has seven LED Status indicators on the front card edge to show operational status of the card at a glance. Figure 5-1 shows 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

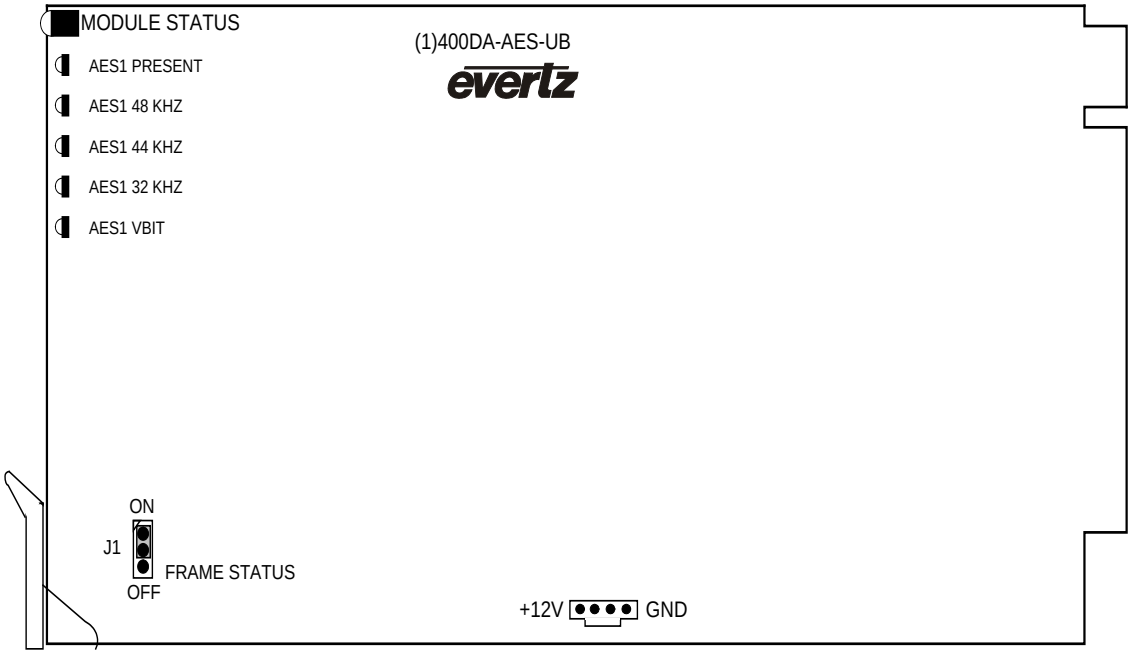

Figure 5-1: LED and Jumper Locations

5.1. 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 400FR 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.