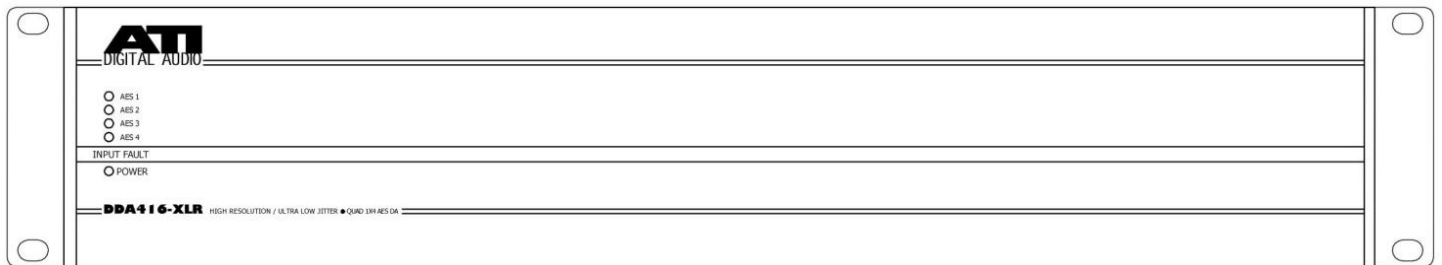




DDA416-XLR

Series 3 Ultra-Low Jitter 192 kHz Quad 1x4 AES/EBU Distribution Amplifier



OPERATING AND MAINTENANCE MANUAL

Table of Contents

Safety Information	3
Unpacking	3
Installation Location	3
Grounding	3
Electromagnetic Capability	3
Maintenance	3
Declarations of Conformity	3
Air Temperature & Humidity	4
Description	4
Inputs	4
Outputs	4
Block Diagram	5
Front Panel Display & Switches	6
Rear Panel Connections & Switches	7
Configuration DIP Switches	7
Installation	8
Specifications	8
Warranty	9

DDA416-XLR FEATURES

- Accepts AES/EBU (AES3) inputs.
- 4 independent 1X4 AES/EBU Distribution Amplifiers
- 16 AES/EBU 110 Ohm XLR outputs
- All inputs and outputs transformer isolated
- Supports sample rates from 32 through 192 kHz
- Front panel fault indicators for all inputs
- Flexible signal routing system
- Quiet and cool internal linear power supply
- Attractive and rugged 2RU package
- All XLR connectors are on rear panel; no breakout cables required

SAFETY INFORMATION

To reduce risk of electric shock, do not remove covers. There are no user-serviceable items inside. Please refer servicing to qualified personnel.

UNPACKING

Examine all shipping cartons for external damage and retain all damaged cartons for inspection by the carrier. Examine all equipment for any sign of damage. Do not connect AC mains power to a unit which appears to be damaged. Contact the carrier to file a damage claim.

INSTALLATION LOCATION

This equipment must be installed in a location meeting the environmental conditions specified below. Adequate cooling must be provided if units are to be operated in high temperature locations. Exposure to liquid and condensation must be avoided.

GROUNDING

This equipment is connected to earth through the center conductor of the AC mains cable. Proper grounding protects operators from electric shock, and it must be maintained whenever the unit is connected to AC.

ELECTROMAGNETIC COMPATIBILITY

This unit complies with electromagnetic requirements described in 89/336/EC and FCC Part 15. This unit does not generate undue electromagnetic interference, and is adequately protected against electromagnetic interference so that it can operate properly.

MAINTENANCE

This unit requires no maintenance other than periodic wiping with a soft dry cloth to remove any dust or contaminating substances. Do not use solvents for cleaning.

DECLARATIONS OF CONFORMITY

Class A Equipment – FCC Notice

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules.

CE Declaration of Conformity

ATI Audio Inc., West Berlin, New Jersey 08091 USA, declares that all Model DDA416-XLR units are in conformity with the following EU regulations and amendments:

Low Voltage (LVD) 73/23/EEC and 93/69/EEC

Electromagnetic Compatibility (EMC): 89/336/EEC and 92/31/EEC and 93/68/EEC

This equipment is also in conformity with the following standards and documents:

Safety: EN 60950:2001 (Class I Equipment)

Safety of laser products: EN 60825-1:1994 and A11 and A2, EN60825-2:2000

EMC: EN55103-1/-2:1996, electromagnetic environments E2 and E4.

West Berlin, NJ USA, 31 July 2009



President

AIR TEMPERATURE AND HUMIDITY

Normal operation of this unit is warranted under ambient conditions defined by EN 60721-3-3, set IE32, value 3K3. The most important conditions of this standard are ambient temperature +5 to +40°C, relative humidity 5% to 85% (with no ice or condensation), absolute humidity 1 to 25 g/m³ and rate of temperature change <0.5°C per minute. Care should be taken to avoid operation outside these limits or erratic operation may result.

DESCRIPTION

The ATI Model DDA416-XLR gives you four independent 1X4 AES/EBU Digital Audio Distribution Amplifiers, each one capable of handling AES3 audio with sample rates from 32 to 192 kHz. Operation of the unit is simple and straightforward, and it is housed in a rugged 2U rack mount enclosure. All audio connections are made directly to the unit's rear panel XLR connectors, and no special breakout cables are required.

The DDA416-XLR features flexible signal routing. Rear panel accessible DIP switches let you assign each bank of 4 outputs to any of the 4 inputs. This lets you configure the DDA as a Dual 1X8 or a 1X16. Other asymmetrical routing combinations, such as 1X4 plus 1X12, are also possible. Summary alarm LEDs indicate faults occurring on any input, regardless of the audio routing.

The ultra-low jitter performance of the DDA416-XLR makes it an exceptional performer in any critical audio application. It is ruggedly designed for years of professional service.

INPUTS

Incoming AES/EBU formatted digital audio data is applied to individual input transformers. Inputs are always terminated at 100 ohms.

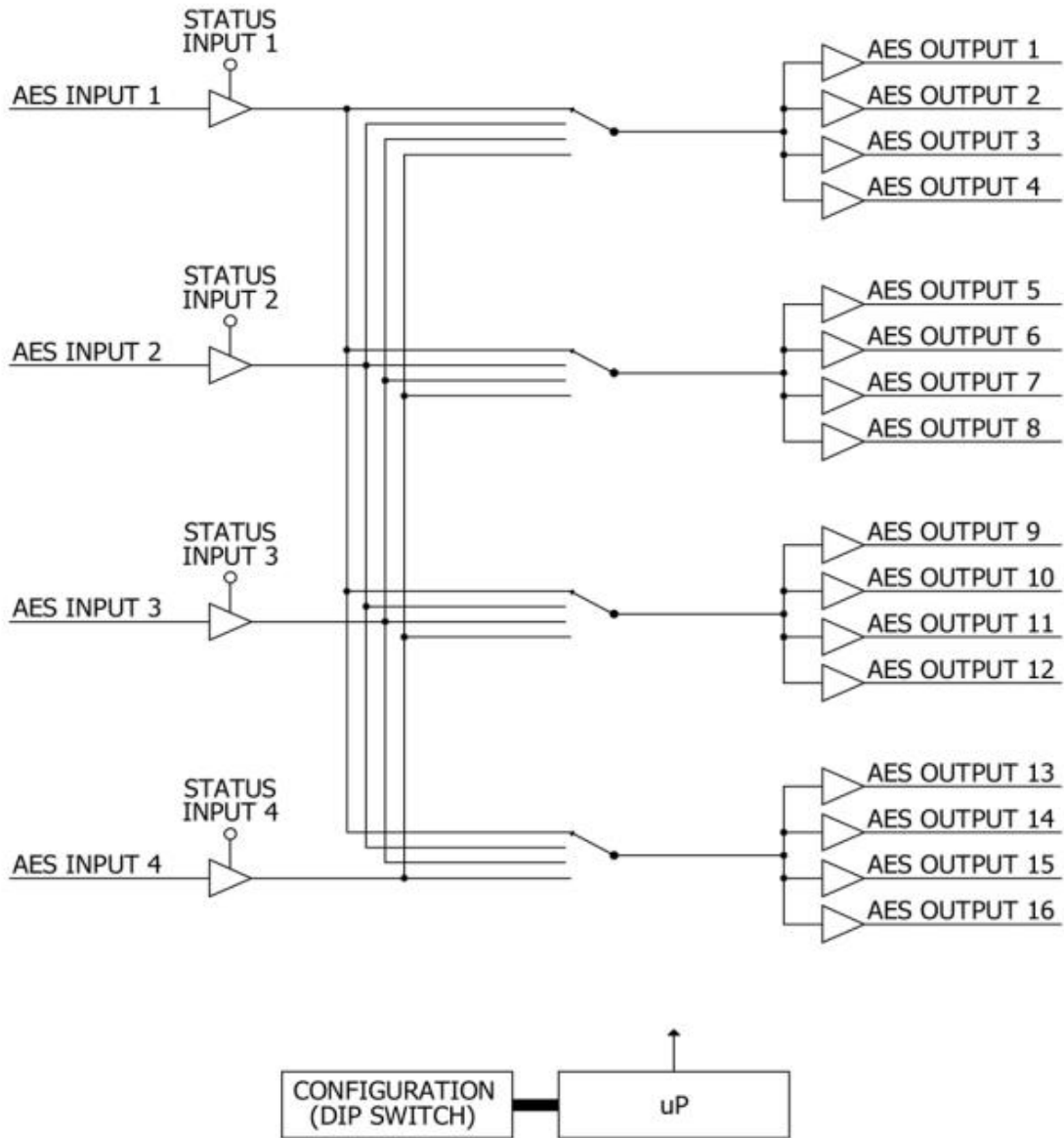
OUTPUTS

AES/EBU XLR Outputs 1 through 4, 5 through 8, 9 through 12 and 13 through 16 operate as individual groups. Each or any of these groups may be driven from the following input sources, as selected via rear panel DIP switches:

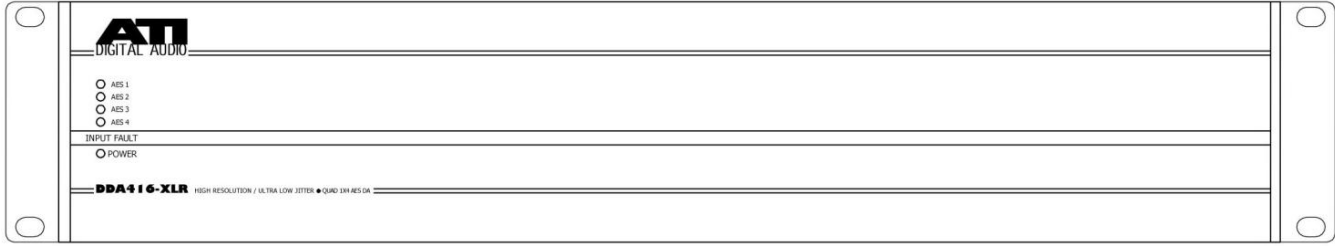
1. AES/EBU Input 1
2. AES/EBU Input 2
3. AES/EBU Input 3
4. AES/EBU Input 4

It is not necessary to terminate unused outputs, as each is individually isolated. Cable routing should be kept clear of AC lines and other noise-producing wiring.

DDA416-XLR BLOCK DIAGRAM



FRONT PANEL DISPLAYS



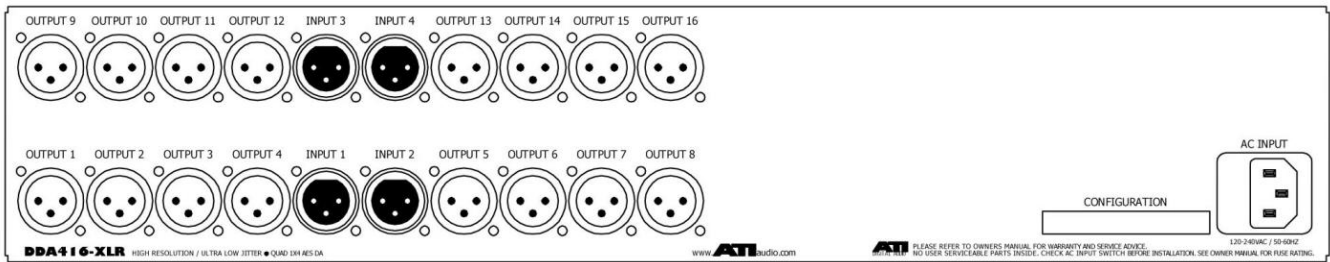
POWER

Indicated that low voltage DC is applied to the input of the voltage regulators.

INPUT FAULT

Indicated an error condition on any of the four inputs, AES1, AES2, AES3 and AES4.

REAR PANEL CONNECTIONS AND SWITCHES



AES/EBU Input 1

Provides a balanced, transformer isolated 110 ohm AES/EBU input that may be routed to Outputs 1 – 4, 5 – 8, 9 – 12 and/or 13 – 16 via the configuration DIP switches.

AES/EBU Input 2

Provides a balanced, transformer isolated 110 ohm AES/EBU input that may be routed to Outputs 1 – 4, 5 – 8, 9 – 12 and/or 13 – 16 via the configuration DIP switches.

AES/EBU Input 3

Provides a balanced, transformer isolated 110 ohm AES/EBU input that may be routed to Outputs 1 – 4, 5 – 8, 9 – 12 and/or 13 – 16 via the configuration DIP switches.

AES/EBU Input 4

Provides a balanced, transformer isolated 110 ohm AES/EBU input that may be routed to Outputs 1 – 4, 5 – 8, 9 – 12 and/or 13 – 16 via the configuration DIP switches.

Configuration DIP Switches

Provides routing for signal flow in the unit. See the DIP Switch Routing Table for settings:

SOURCE SELECTION FOR AES/EBU OUTPUTS 1, 2, 3 & 4

Selected Source →	AES INPUT 1	AES INPUT 2	AES INPUT 3	AES INPUT 4
DIP Switch 1	Down	Up	Down	Up
DIP Switch 2	Down	Down	Up	Up
DIP Switch 3	Down	Down	Down	Down

SOURCE SELECTION FOR AES/EBU OUTPUTS 5, 6, 7 & 8

Selected Source →	AES INPUT 1	AES INPUT 2	AES INPUT 3	AES INPUT 4
DIP Switch 4	Down	Up	Down	Up
DIP Switch 5	Down	Down	Up	Up
DIP Switch 6	Down	Down	Down	Down

SOURCE SELECTION FOR AES/EBU OUTPUTS 9, 10, 11 & 12

Selected Source →	AES INPUT 1	AES INPUT 2	AES INPUT 3	AES INPUT 4
DIP Switch 7	Down	Up	Down	Up
DIP Switch 8	Down	Down	Up	Up
DIP Switch 9	Down	Down	Down	Down

SOURCE SELECTION FOR AES/EBU OUTPUTS 13, 14, 15 & 16

Selected Source →	AES INPUT 1	AES INPUT 2	AES INPUT 3	AES INPUT 4
DIP Switch 10	Down	Up	Down	Up
DIP Switch 11	Down	Down	Up	Up
DIP Switch 12	Down	Down	Down	Down

AC Input

Connector for socket IEC 320/C13. Power cord is supplied. Note that voltage selection is via jumpers on main circuit board. Units are supplied wired for 115VAC or 230VAC, as specified at time of order. Power transformer primary windings are paralleled for 115VAC or wired in series for 230VAC. Internal jumpers allow field modification if necessary. See below for voltage conversion instructions.

INSTALLATION

LOCATION

To avoid addition of jitter (timing variations) to the output clock signals, which could cause noise and distortion or loss of synchronization in the recovered audio, avoid locating the DDA in close proximity to a high energy, high frequency switching type power supply or a power amplifier that utilizes a switching supply. If possible, do not power both devices from the same AC power line.

POWER

If it is necessary to convert a unit wired for 115VAC to 230VAC operation, unplug the unit from the power source, remove the cover mounting screws and locate the jumpers next to the power transformer. Clip the jumpers 1-2 and 3-4 (don't unsolder), jumper from 2-3 carefully soldering together the free ends of 2-3 previously clipped. This procedure is recommended to avoid soldering damage to the multi-layer PC board.

WIRING

XLR inputs require special controlled impedance, 110 ohm, low loss, foil shielded, twisted pair cables. Standard audio cable is not recommended except for runs of only a few feet. Belden and most other cable manufacturers offer special digital audio cabling for this application. Keep cable length as short as possible.

DDA416-XLR TECHNICAL SPECIFICATIONS

INPUTS

CONNECTORS	4 XLR female
SENSITIVITY	XLR 1.200mVp-p minimum
IMPEDANCE	110Ω +/- 20%, transformer isolated, balanced and floating
SAMPLE RATES	30kHz to 200kHz, independent for each input

OUTPUTS

CONNECTORS	16 XLR male
LEVEL	5Vp-p loaded at 110Ω
IMPEDANCE	110Ω +/- 20%
SAMPLE RATES	30kHz to 200kHz
JITTER	<800 picoseconds peak to peak
PROPAGATION DELAY	<250 nanoseconds
	Note: All parameters are validated using Stanford Research SR1 – 200 kHz dual-domain audio analyzer

INDICATORS

INPUT FAULT LEDs	AES 1, AES 2, AES 3 & AES 4
POWER	Indicated power to all circuits
POWER	Internal Supply, 115/230VAC ±10%, 50/60Hz ±4%, 10VA, IEC320 3 pin connector
SIZE	2 RU Package, 19" (48.3cm) W x 3.5" (8.9cm) H x 8.5" (21.6cm) D
WEIGHT	9 lbs. (4.1kg) net; 10 lbs. (4.5kg) shipping weight
WARRANTY	Limited, One Year Warranty

One Year Limited Warranty

DaySequerra warrants ATI products to be free from defects in materials and workmanship to its original owner for one (1) year from the date of purchase. DaySequerra will repair or replace such product or part thereof that upon inspection by DaySequerra, is found to be defective in materials or workmanship subject to conditions contained herein.

ATI products are sold worldwide, through a network of authorized ATI dealers and distributors. This Warranty is for the sole benefit of the original purchaser of an ATI product, purchased directly from an authorized ATI dealer or distributor, is restricted to such original purchaser, and shall not be transferred to a subsequent purchaser of the product. Proof of purchase in the form of a bill of sale or receipted invoice substantiating that the product was purchased directly from an authorized ATI dealer or distributor and is within the warranty period must be presented to obtain warranty service. Removal or alteration of the original ATI serial number from a product automatically renders that product warranty null and void.

A Return Authorization Number must be obtained from DaySequerra in advance of return. Parts or product for which replacement is made shall become the property of DaySequerra. The customer shall be responsible for all costs of transportation and insurance to and from the DaySequerra factory, and all such costs will be prepaid.

DaySequerra shall use reasonable efforts to repair or replace any product covered by this limited warranty within thirty days of receipt. In the event repair or replacement shall require more than thirty days, DaySequerra shall notify the customer accordingly. DaySequerra reserves the right to replace any product that has been discontinued from its product line with a new product of comparable value and function.

This warranty shall be void in the event a covered product has been damaged, or failure is caused by or attributable to acts of God, abuse, accident, misuse, improper or abnormal usage, failure to follow instructions, improper installation or maintenance, alteration, or lightning, power fluctuations and other incidental or environmental conditions. Further, product malfunction or deterioration due to normal wear is not covered by this warranty.

DAYSEQUERRA DISCLAIMS ANY WARRANTIES, EXPRESSED OR IMPLIED, WHETHER OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE, EXCEPT AS EXPRESSLY SET FORTH HEREIN. THE SOLE OBLIGATION OF DAY SEQUERRA UNDER THIS LIMITED WARRANTY SHALL BE TO REPAIR OR REPLACE THE COVERED PRODUCT, IN ACCORDANCE WITH THE TERMS SET FORTH HEREIN. DAYSEQUERRA EXPRESSLY DISCLAIMS ANY LOST PROFITS, GENERAL, SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES WHICH MAY RESULT FROM BREACH OF ANY WARRANTY, OR ARISING OUT OF THE USE OR INABILITY TO USE ANY DAYSEQUERRA PRODUCT.

Some states do not allow the exclusion or limitation of incidental or consequential damages or limitation on how long an implied warranty lasts, so the above limitations and exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights that vary from state to state. DaySequerra reserves the right to modify or discontinue, without prior notice to you, any model or style product. If warranty problems arise, or if you need assistance in using your product contact:

DaySequerra
154 Cooper Road, Building 902
West Berlin, NJ 08091

For more information, please call 856-719-9900, visit www.atiaudio.com or email us at support@daysequerra.com.