



AESx4, SPDIFx7, CLKx6 & GENx6

Digital Audio Distribution Units

User Guide

Notational Conventions in this User Guide

Note	Identifies information that needs extra emphasis. Generally supplies extra information to help you to better use the product.
CAUTION	Identifies information that, if ignored, may cause damage to the unit or other equipment in your system.
WARNING	Identifies information that, if ignored, may be hazardous to your health or that of others.
CAPS	Controls, switches or other markings on the chassis of the unit.

Operator Safety Summary

Mains Voltage Selection The digital audio distribution units use an external power supply (Lucid PS-3 or PS-3E). The choice of power supply determines the mains voltage required for proper operation. Refer to power supply markings for the correct AC source value.

Grounding The chassis of this product is grounded through the grounding conductor of the power cord. To avoid electric shock, plug the power cord into a properly wired receptacle before making any connections to the product. A protective ground connection, by way of the grounding conductor in the power cord, is essential for safe operation. Do not defeat the safety purpose of the grounding plug. The grounding plug has two blades and a third grounding prong. The third prong is provided for your safety. When the provided plug does not fit your outlet, consult an electrician for replacement of the obsolete outlet.

Danger from Loss of Ground If the protective ground connection is lost, all accessible conductive parts, including knobs and controls that may appear to be insulated, can render an electric shock.

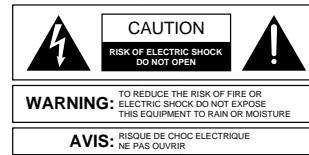
Operating Location Do not operate this equipment under any of the following conditions: explosive atmospheres, in wet locations, in inclement weather, improper or unknown AC mains voltage, or if improperly fused. Do not install near any heat source such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat. Unplug this apparatus during lightning storms or when unused for long periods of time.

Stay Out of the Box To avoid personal injury do not remove the product covers or panels. Do not attempt to disassemble the external power supply. Do not operate the product without the covers and panels properly

installed. Only use accessories specified by the manufacturer.

Clean only with a damp cloth.

Equipment Markings



SEE OWNERS MANUAL, VOIR CAHIER D'INSTRUCTIONS.
No user serviceable parts inside. Refer servicing to qualified service personnel.
Il ne se trouve a l'intérieur aucune pièce pouvant être réparée l'utilisateur.
S'adresser a un réparateur compétent.

The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user of the presence of uninsulated 'dangerous voltage' within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons. The exclamation point within an equilateral triangle is intended to alert the user of the presence of important operating and maintenance instructions in the literature accompanying the product (i.e., this User Guide).

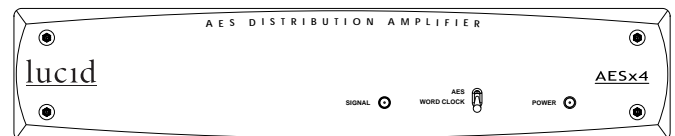
CAUTION

To prevent electric shock, do not use the polarized plug supplied with the unit with any extension cord, receptacle, or other outlet unless the prongs can be fully inserted.

AESx4

Description

The AESx4 is used to distribute AES3 (2-channel digital audio) or AES11 (digital audio clock) between equipment using standard 3-pin XLR connectors. A switch on the front panel allows you to select between a word clock and an AES input. When the AES input is selected, either AES3 or AES11 can be buffered then distributed to the outputs. When the WORD CLOCK input is selected only, AES11 is generated based on the sample rate of the word clock.



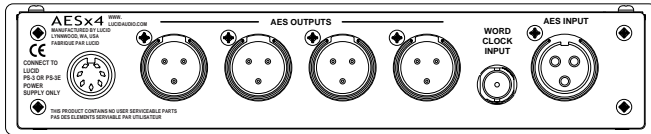
Switches

The AESx4 has one switch placed on the front panel that selects either the WORD CLOCK or AES input.

LEDs

Signal Present: In AES mode, the signal present detector drives an LED when there is activity on the AES input. In word clock mode, the signal present detector is driven only when the WORD CLOCK input is valid.

Power: Power LED driven by +5V regulated from its power supply.



Connectors

WORD CLOCK Input: Is a coaxial BNC connector with nominal input impedance of 75 ohms. Internal termination is provided with a jumper.

AES Input: Is a 3-pin XLR connector with nominal input impedance of 110 ohms. Internal termination is provided, as per the AES3 spec. The data can be either AES3 or AES11 (AES3 with no audio data).

Power: Supplied by external Lucid PS-3 or PS-3E.

AES Outputs: Are 3-pin XLR connectors with nominal impedance of 110 ohms.

Jumper Settings

- J1 is used to control the AES input pin 4 ground. The default setting connects pin 4 of the connector straight to chassis ground. The other position BYPASS has a capacitor between pin 4 and chassis ground.
- J4 with positions HIGH or LOW determines the WORD CLOCK input range. The HIGH range (default) accepts word clock frequencies between 44.1 kHz to 96 kHz whereas the LOW range accepts word clock frequencies between 32 kHz to 48 kHz.
- J6 sets the WORD CLOCK input to either TERMINATED or OPEN (default). If the jumper is set to TERMINATED, the driver's source impedance should be 75 ohms to match the AESx4's BNC input impedance.

Specifications

Performance

Input impedance: AES: 110 ohms, Word Clock: 75 ohms

Output impedance: AES: 110 ohms

External sync range: 32 kHz to 96 kHz

Connectors

AES input: Balanced XLR

AES outputs: 4 x XLR

Word Clock input: BNC

Power supply: External AC (Lucid PS-3 or PS-3E) using 7-pin DIN connector

Physical

1/2 U Chassis (HxWxD): 1.72 in. x 8.5 in. x 8 in. (4.37 cm x 21.59 cm x 20.32 cm)

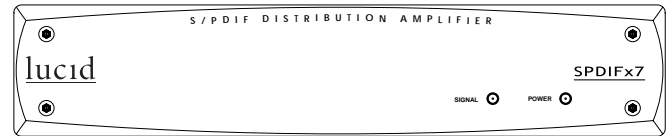
Net Weight: 2.5 lb. (1.1 kg)

SPDIFx7

Description

The SPDIFx7 is used to distribute S/PDIF (2-channel digital audio) between equipment using standard RCA, XLR, and TOSLINK connectors. It has one S/PDIF input on a RCA connector and

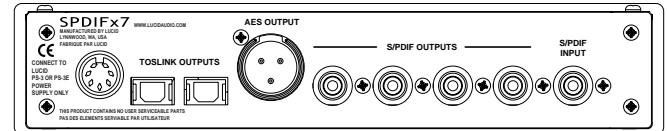
distributes the input digital audio to 4 RCA outputs, 2 TOSLINK outputs and 1 AES3 (XLR) output.



LEDS

Signal Present: In AES mode, the signal present detector drives an LED when there is activity on the S/PDIF input.

Power: Power LED driven by +5V regulated from its power supply.



Connectors

S/PDIF Input. Is a RCA connector, and accepts S/PDIF formatted electrical signals, with nominal impedances of 75 ohms. The S/PDIF Input provides internal termination of this signal, as per the S/PDIF (IEC958) spec.

Power: Supplied by external Lucid PS-3 or PS-3E

S/PDIF Outputs: Are standard RCA connectors with nominal impedance of 75 ohms.

AES Outputs: Is a 3-pin XLR connector with nominal impedance of 110 ohms.

TOSLINK Outputs: Are optical and designed to run over plastic optical cable up to approximately 30 feet.

Jumper Settings

J1 is used to control the RCA input grounding. The default setting connects the shield of the connector straight to chassis ground. The other setting, BYPASS, has a capacitor between the shield and chassis ground.

Specifications

Performance

Input impedance: S/PDIF: 75 ohms

Output impedance: S/PDIF: 75 ohms, AES: 110 ohms

External sync range: 32 kHz to 96 kHz

Connectors

S/PDIF input: RCA (coaxial)

S/PDIF outputs: 4 x RCA (coaxial)

AES output: Balanced XLR

TOSLINK output: 2 x TOSLINK optical

Power supply: External AC (Lucid PS-3 or PS-3E) using 7-pin DIN connector

Physical

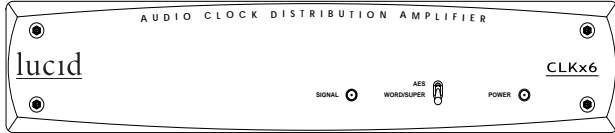
1/2 U Chassis (HxWxD): 1.72 in. x 8.5 in. x 8 in. (4.37 cm x 21.59 cm x 20.32 cm)

Net Weight: 2.5 lb. (1.1 kg)

CLKx6

Description

The CLKx6 is used to distribute sync information. In AES mode the unit can provide a word clock or super clock format to the 6 parallel outputs. In word clock mode, the input signal is mapped directly to the outputs through a series of buffers.



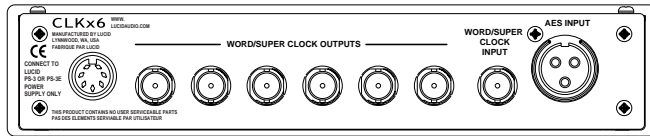
Switches

The CLKx6 has one switch placed on the front panel that selects either the WORD CLOCK or AES input.

LEDs

Signal Present: In AES mode, the signal present detector drives an LED when there is a lock on the AES input. In word clock mode, the signal present detector is driven when there is activity on the WORD CLOCK input.

Power: Power LED driven by +5V regulated from its power supply.



Connectors

WORD/SUPER CLOCK Input: Is a coaxial BNC connector with nominal input impedance of 75 ohms. Internal termination is provided with a jumper.

AES Input: Is a 3-pin XLR connector with nominal input impedance of 110 ohms. Internal termination is provided, as per the AES3 spec. The data can be either AES3 or AES11 (AES3 with no audio data).

Power: Supplied by external Lucid PS-3 or PS-3E

CLOCK Outputs: Are coaxial BNC connectors with nominal impedance of 75 ohms.

Jumper Settings

- J3 is used to select a word clock or super clock output format derived from the AES input signal.

Specifications

Performance

Input impedance: AES: 110 ohms, Clock: 75 ohms

Output impedance: AES: 110 ohms

External sync range: 32 kHz to 96 kHz

Connectors

AES input: Balanced XLR

Word/Super Clock input: BNC

Word/Super Clock outputs: 6 x BNC

Power supply: External AC (Lucid PS-3 or PS-3E) using 7-pin DIN connector

Physical

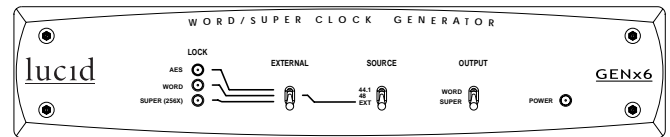
1/2 U Chassis (HxWxD): 1.72 in. x 8.5 in. x 8 in.
(4.37 cm x 21.59 cm x 20.32 cm)

Net Weight: 2.5 lb. (1.1 kg)

GENx6

Description

The GENx6 is used to distribute word clock and super clock, and also act as a generator device with its internal 2 clocks. It provides 6 clock outputs that may be internally generated to either word or super clock, or clocked from an external source. The device can also synthesize a word clock or super clock output derived from the word clock, super clock or AES input.



Switches

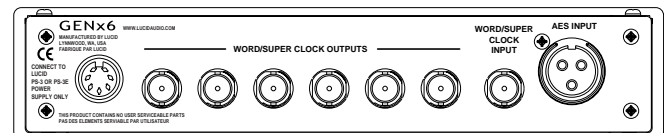
The GENx6 has 3 switches located on its front panel.

- One 3-way toggle switch selects between internal 44.1 kHz sample rate, internal 48 kHz sample rate, or external sample rate.
- One 3-way toggle switch selects between the external sync sources of AES, WORD CLOCK or SUPER CLOCK.
- One 2-way toggle switch determines if the output is WORD CLOCK (x1 sample rate) or SUPER CLOCK (x256 sample rate).

LEDs

3 LOCK LEDs (a stack of 3): The upper LOCK LED, labeled AES, indicates if the AES input PLL has locked to an AES3 or AES11 input. The middle LOCK LED, labeled WORD indicates if the word clock PLL has locked to a word clock input. The bottom LOCK LED, labeled SUPER (256x), indicates if the input PLL has locked to a super clock input.

Power: The power LED is driven by +5V regulated from the supply.



Connectors

WORD/SUPER CLOCK Input: Is a coaxial BNC connector with nominal input impedance of 75 ohms. Internal termination is provided with a jumper.

AES Input: Is a 3-pin XLR connector with nominal input impedance of 110 ohms. Internal termination is provided, as per the AES3 spec. The data can be either AES3 or AES11 (AES3 with no audio data).

Power: Supplied by external Lucid PS-3 or PS-3E.

WORD/SUPER CLOCK Outputs: Are coaxial BNC connectors, with nominal source impedance of 75 ohms.

Jumper Settings

- J3 with positions HIGH or LOW determines the WORD CLOCK input range. The HIGH range (default) accepts word clock frequencies between 44.1 kHz to 96 kHz whereas the LOW range accepts word clock frequencies between 32 kHz to 48 kHz.
- J5 sets the WORD CLOCK input to either TERMINATED or OPEN (default). If the jumper is set to TERMINATED, the driver's source impedance should be 75 ohms to match the GENx6's BNC input impedance.

Specifications

Performance

Input impedance: AES: 110 ohms, Clock: 75 ohms

Output impedance: AES: 110 ohms

External sync range: 32 kHz to 96 kHz

Internal sample rates: 44.1 kHz, 48 kHz

Connectors

AES input: Balanced XLR3

Word/Super Clock input: BNC

Word/Super Clock outputs: 6 x BNC

Power supply: External AC (Lucid PS-3 or PS-3E) using 7-pin DIN connector

Physical

1/2 U Chassis (HxWxD): 1.72 in. x 8.5 in. x 8 in.
(4.37 cm x 21.59 cm x 20.32 cm)

Net Weight: 2.5 lb. (1.1 kg)

Warranty Offer

We would like to offer you an incentive to complete our product registration form. Either fully complete and mail your product registration card or register online at www.lucidaudio.com. You will then have a total of 3 years of warranty coverage, under the terms and limitations as set forth below, without additional cost.

If you don't register your product, you will still receive one year of warranty coverage, but it only takes a minute to fill out the card, and we won't share your personal information with others.

Warranty

Lucid expressly warrants to the original purchaser ("Buyer"), subject to the terms and conditions set forth below, that the Product will be free from defects in material and workmanship as a result of normal commercial use for one (1) year from the date of purchase. This warranty will be automatically extended (subject to the additional limitations set forth below) for an additional two years if the Warranty Registration is completed and returned to Lucid (or completed online) within thirty (30) days of the date of delivery.

Lucid's warranty obligation is limited to the repair, replacement, or refund at Lucid's sole discretion, of the part or parts of the Product which may thus prove defective in materials or workmanship within one year from date of purchase (or three years from the date of purchase if Buyer has registered its purchase as provided above) under normal use and which our examination discloses to our satisfaction to be thus defective,

provided that Buyer gives Lucid prompt notice of its warranty claim and satisfactory proof thereof.

Lucid will make every reasonable effort to ensure that parts are available to support the repair of our products under warranty. In the event that a product or component part thereof becomes obsolete, unavailable or irreparable, Lucid reserves the right to refund a prorated portion of the purchase price in full satisfaction of all warranty claims. A refund of the purchase price is prorated as follows: 100% through year one, 67% through year two, and 33% through year three.

In order to serve you better we request that the Buyer shall, prior to shipping Product to Lucid for warranty service, contact Lucid and secure a Return Authorization Number that shall be included with the returned Product. This will facilitate our efforts to keep track of your Product and process your warranty repair as quickly as possible. Buyer will prepay all freight charges to ship the Product to Lucid for warranty inspection and service. This warranty is subject to Lucid's inspection of the Product at its facilities and, upon Lucid's request, satisfactory proof of purchase (dated copy of original retail dealer's invoice.)

Lucid reserves the right to effect repairs to the product with reconditioned components/parts. Products once repaired under warranty will be shipped to Buyer freight prepaid by Lucid via United Parcel Service (surface) or any similar shipper, to any location designated by buyer within the Continental United States. At Buyer's request and expense Product will be returned via airfreight. Outside the continental United States, repaired or replaced products will be returned freight collect.

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This Lucid product has been designed and manufactured for use in professional and studio audio systems and is not intended for other usage. This warranty only applies to Buyers using the Product in professional and studio audio systems. With respect to others, including but not limited to consumers for personal, family, or household use, Lucid expressly disclaims all warranties, including but not limited to warranties of merchantability and fitness for a particular purpose and the express warranties as otherwise provided herein.

Lucid reserves the right to modify the design or make additions to, or improvements to, its product lines without making similar upgrades to Product purchased by Buyer. Lucid does not authorize any third party, including any dealer or sales representative, to assume any liability, effect any repairs or modifications to the Product, or make any additional warranties or

representation regarding the Product or Product information on behalf of Lucid.

Lucid's total liability on any claim, whether in contract, tort (including negligence) or otherwise arising out of, connected with, or resulting from the manufacture, sale, delivery, resale, repair, replacement or use of Product will not exceed the purchase price of the Product or any part thereof which gives rise to the claim. In no event will Lucid be liable for any incidental or consequential damages including but not limited to damage for lost revenue, cost of capital, claims of customers for service interruptions or failure to supply, and costs and expenses incurred in connection with labor, overhead, transportation, installation or removal of products or substitute facilities or supply houses as a result of Product failure.

This limited warranty gives Buyer certain rights. Buyer may have additional rights under applicable law.

Service

Where to Get Service

If outside of the USA

If you have determined that your unit requires repair services and you live outside of the United States, please contact your local Lucid dealer or distributor for instructions on how to obtain service.

If inside the USA

Lucid will perform in-warranty or out-of-warranty service on any product it has manufactured for a period of 3 years from date of manufacture. If you reside in the USA, then proceed as follows:

In-Warranty Repairs

Repairs made in-warranty will cost you only one-way freight charges. We'll prepay the return (surface) freight. Of course, if the repair is due to operator error, parts and labor will be charged. If there are charges for the repair costs, you will pay for the return freight. All charges will be COD unless you have made other arrangements (prepaid, Visa, or MasterCard).

Out of Warranty Repairs

If the warranty period has passed, you'll be billed for all necessary parts, labor, packaging materials, and freight charges.

To Get Your Unit Repaired (USA Customers Only)

Call our Technical Services Group for a return authorization (RA) number: (888) 349-3222 or (425) 742-1518 Monday through Friday 6:00 am to 5:00 pm Pacific Time. Have your serial number ready to give to the service representative. Pack the unit in its original packaging materials. Include your name, address, daytime telephone number, and a brief statement of the problem. Write the RA number on the outside of the box. Ship the unit to Lucid, freight prepaid. We do not accept freight collect shipments.

Lucid

14926 35th Ave West

Lynnwood WA 98037

If You Don't Have Factory Packaging Materials

If you send us your product in substandard packaging, we will charge you for factory shipping materials. If you don't have the factory packaging materials, do the following: Select an oversized carton. Wrap the unit in a plastic bag, and surround it with bubble-wrap. Pack the box full of Styrofoam peanuts. Be sure there is enough clearance in the carton to protect the rack ears. We will return the unit in Lucid packaging.

Declaration of Conformity

We, Lucid

14926 35th Ave. West, Lynnwood, Washington, USA

Declare under our sole responsibility that the products:

AESx4 Distribution Amplifier

SPDIFx7 Distribution Amplifier

GENx6 Word/Super Clock Generator

CLKx6 Audio Clock Distribution Amplifier

to which this declaration relates, are in conformity with the following standards:

EN55103-1 (does not apply to SPDIFx7)

Electromagnetic compatibility—Product family standard for audio, video, audio-visual and entertainment lighting control apparatus for professional use.

Part 1 Emission

EN 55103-2

Electromagnetic compatibility—Generic immunity standard

Part 1: Residential, commercial, and light industry.

PS-3E power supply complies with this code:

EN 60950

Safety requirements for mains operated electronic and related apparatus for household and similar general use.

The technical construction file is maintained at:

Lucid
14926 35th Avenue West
Lynnwood, WA 98037-2303
USA

The authorized representative located within the European Community is:
World Marketing Associates
P.O. Box 100
St. Austell, Cornwall, PL26 6YU, U.K.
Date of issue: June 2001
Place of issue: Lynnwood, Washington USA

Authorized signature:



Dane Butcher, President

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User Guide
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