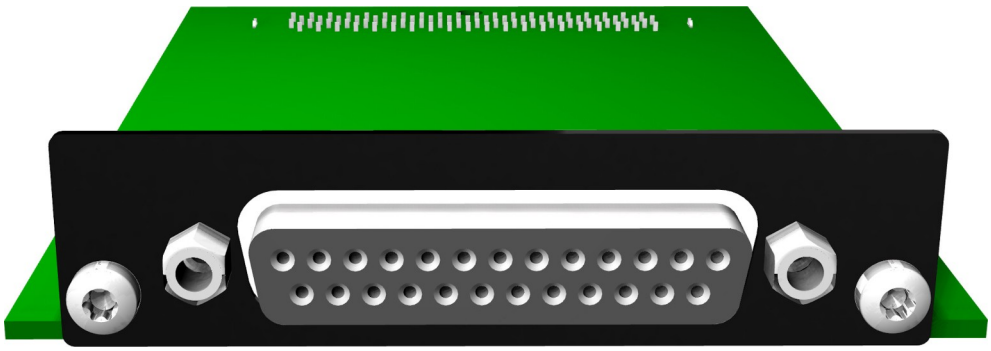
Appsys ProAudio

flexiverter



AUX-AES3

8x8 channel AES/EBU Extension Card for FLX devices

User's Manual

((en))

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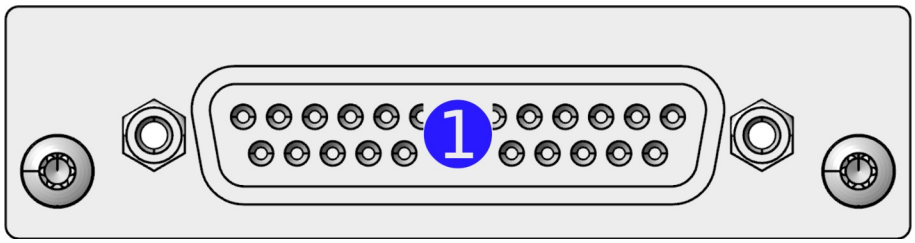
1. CONNECTORS



❶ AES3 Input/Output.
Pinout (Tascam/Yamaha) can be changed, see 4. . Variable DB25 pinout

2. DESCRIPTION

The AUX-AES3 card provides 8x8 channels of AES/EBU
It can be fitted into every **flexiverter (FLX)** device for the following purposes:

- to use the **FLX as standalone converter** between the built-in interface and this extension card
- to **add extra output splits** to existing FLX devices by "tapping" channels of another conversion
- to **add additional channels/protocols to the FLX** when it is used in double-flexiverter or flexiverter + multiverter configurations (i.e. to make the FLX-AES3 work as 24x24ch AES3 device).

For a detailed description of possible configurations, please refer to the manual of your base FLX device.

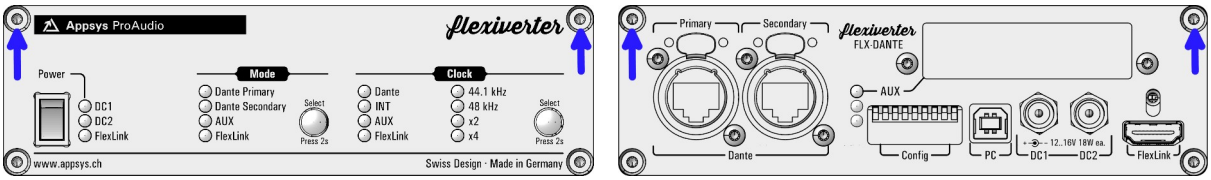
2.1. Box Contents

- 1 AUX-AES3 card
- 1 Slot cover plate
- This manual

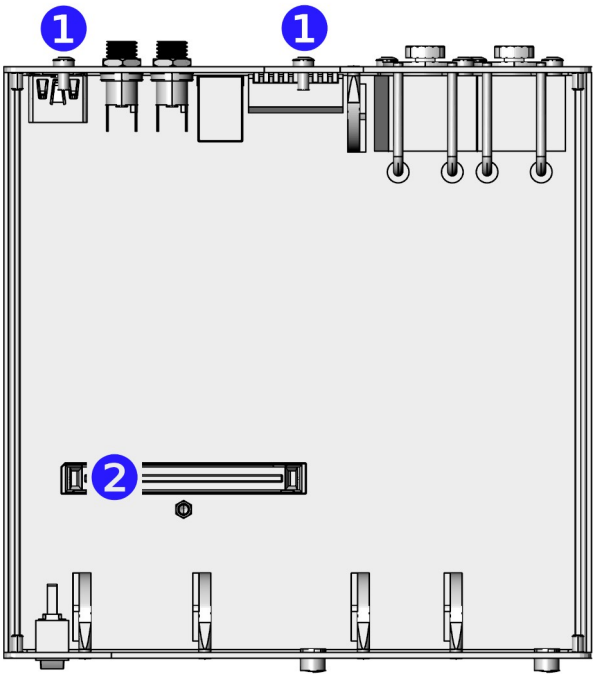
3. INSTALLATION

3.1. Opening the flexiverter

- Required: Torx T10 screwdriver
- Power off the device and detach all cables to avoid short-circuit or damage
- Detach the device from the rack-mount kit
- Remove the four top screws and the top cover by pulling it upwards:



3.2. Flexiverter Inside View



1. Screws for AUX cover plate
2. AUX card connector

3.3. Installing the card

- Remove the screws holding the cover plate, and the blank cover plate 1
- Insert the AUX card from inside, using the supplied cover plate.
  Make sure it is correctly fitted to the card connector 2
- Secure the card using two cover screws 1
- The card has been installed correctly if you are able to select an audio routing mode involving AUX (long-press MODE button to enter Route Mode Selection).

4. VARIABLE DB25 PINOUT

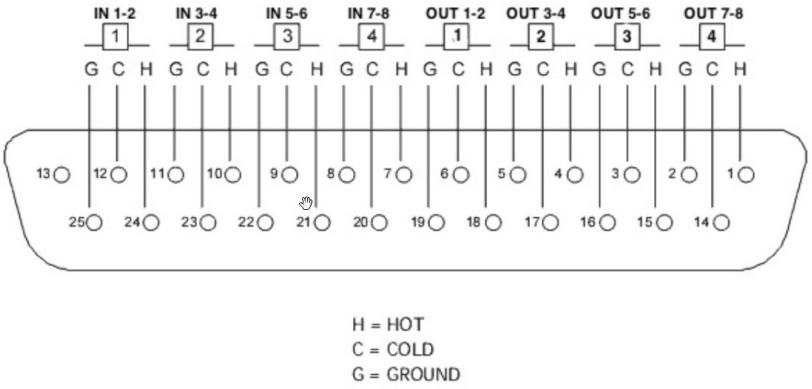
Historically, there are two different pin assignments for the AES/EBU DB25 connectors around, commonly known as **"Yamaha"** and **"Tascam"** style. The **AUX-AES3 supports both pinouts** by means of internal jumpers.

- Locate the jumper blocks on the card and move all jumper blocks (3 each) to the desired position.
- CAUTION: Take care when remove the jumper blocks, pulling both sides equally gently upwards. You might use a knife or a screwdriver to push the blocks upwards. **Make sure not to bend any pins!**
- The jumper position is not visible when the case is closed, but you can determine it from the color of the back AUX LED

▶ Tascam Pinout

Rear LED:
● red/● green/○ white
(error/input ok/output only)

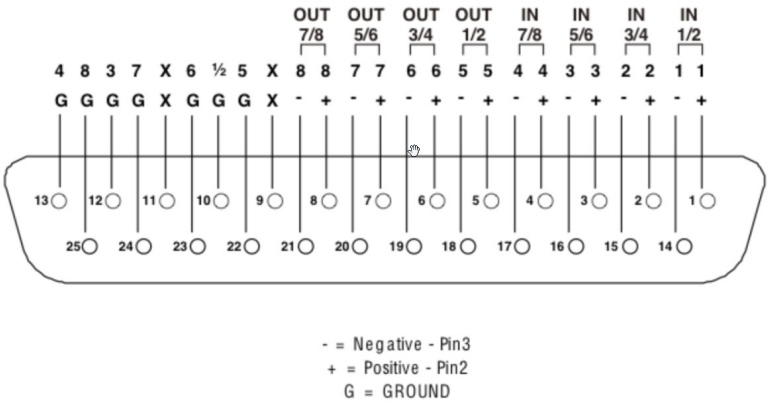
Used with:
- AES59 annex D
- Avid
- Digidesign
- PreSonus
- RME
- Tascam
- Universal



▶ Yamaha Pinout

Rear LED:
● pink/● cyan/● beige
(error/input ok/output only)

Used with:
- Apogee
- Mackie
- Lynx
- SSL
- Yamaha



5. DIP SETTINGS

The behavior of the card can be controlled by DIP switches 4..6 on the FLX device. Changing the DIP settings will come immediately into effect.

AUX-AES3	4 5	Single Wire (full channel count at 48k, 96k and 192k), professional format for metadata*	6	Clock source: Auto*[1]
	4 5	Double wire (half channel count), only in 96k and 192k modes	6	Clock source: Always input 1[1]
	4 5	Quad wire (quarter channel count), only in 192k mode		
	4 5	Single wire, SPDIF (consumer) format for metadata		

* Default setting

- **Single Wire / Double wire / Quad wire:**
  This is to maintain compatibility with legacy devices. Has only an effect for 88.2/96/176.4/192kHz data (44.1/48kHz data is always "single wire").

  In **Single Wire** mode, always two channels are sent per AES3 connection. In 96kHz modes, they are sent at twice the speed as with 48kHz, and at quadruple speed in 192kHz modes. Supported by most up-to-date devices.

  Double Wire mode is a legacy technique to send 96kHz data over 48kHz links, by halving channel count (one channel per AES3 connection). It is also sometimes found on 192kHz devices, allowing 192kHz data to be sent over 96kHz links.

  Quad Wire mode takes this principle further by allowing 192kHz data to be sent over 48kHz links, by quartering the channel count (0.5 channels per AES3 connection).

- SPDIF: Metadata is sent as"consumer" (S/PDIF) format instead of "professional" (AES3) format. This does ONLY apply to metadata, the actual audio sample data is always transmitted in the same way.

1 From FLX device firmware 3.0 on. Older firmware has always "AUTO"

- **Clock source**: Has only an effect when the FLX devices clock source is set to "AUX".

  When set to "**Auto**", the clock is taken from the first valid input, and may switch automatically when the input signal status changes.

  When set to "**Always input 1**", the clock is always taken from input 1. Use this setting if the inputs are coming from different devices, to ensure a reproducible clock source selection.

6. SELF-TEST

The card can be tested for correct operation by the user. This is done using the special self-test mode, in which a special random test pattern is output on all channels. This pattern is looped back via an external cable into the corresponding inputs, where it is checked for consistency.

Note: A special loopback cable / plug is required for this. Depending on the jumpered pinout, the cable must connect each "OUT" (Cold/Hot) to the corresponding "IN".

- Attach the loopback plug or cable
- Turn off the FLX, and hold down [Mode] button while switching on again
- Press [Mode] again until the "CLOCK" LEDs show "INT/48kHz" in cyan color. The device is now in self-test mode.
- The "AUX" LED in the MODE sections shows the result of the self-test:
  red: error/no connection
  green (loopback data received ok)
- Press [Mode] again or power off the device to exit self-test mode.

7. SPECIFICATIONS

Parameter	Value
Dimensions	118x80mm (WxH)
Weight	66g
Operating temperature	0..+55°C, non-condensing
Storage temperature	-40..+85°C, non-condensing
AES3 port	Input and output fully transformer-isolated according to AES/EBU requirements. Maximum speed: 192kHz single-wire Pinout: Tascam(AES) or Yamaha, selectable for each port via internal jumper blocks
Cable lengths	100m / 300 ft., depending on the peer device
Channel count	8x8 @ 48/96/192 kHz (Single-wire) 4x4 @ 96kHz, 4x4 @ 192kHz (Dual wire), 2x2 @ 192 kHz (Quad wire)
Sample rates	44.1kHz, 48kHz, 88.2kHz, 96kHz, 176.4kHz, 192kHz 88.2/96kHz can operate in single-wire or double-wire mode 176.4/192kHz can operate in single-wire, double-wire or quad-wire mode
Latency	Interface <> Flexiverter internal: 2 samples

8. APPENDIX

8.1. Available AUX cards

At the time of writing (2025-03), the following AUX cards are available:

Item	Description
AUX-ADAT	16x16ch ADAT I/O (2x Toslink In+2x out). Supports also S/PDIF
AUX-ADAT-64	64x64ch ADAT I/O (8x Toslink In+8x out on external breakout box)
AUX-AES3	8x8ch AES3 I/O on 1x DB25, fully transformer isolated
AUX-DANTE	64x64ch DANTE network card
AUX-MADI-COAX	64x64ch MADI for coaxial cable (BNC connectors)
AUX-MADI-OPTO	64x64ch MADI optical, SC connector (Multimode 125um 1310 nm)
AUX-MADI-SFP	64x64ch MADI for SFP (Small-Factor Pluggable) modules
AUX-TDM	Up to 32x32ch Time Division Multiplexing TDM/I2S, 3.3V LVCMOS
AUX-WORDCLOCK	BNC wordclock I/O

8.2. Available FLX devices

At the time of writing (2025-03), the following FLX devices are available:

Item	Description
FLX-AES3	16x16 channel AES3 flexiverter (with AUX slot)
FLX-AES3/SRC	16x16 channel AES3 flexiverter with individual SRCs on each input
FLX-AES50	96x96 channel AES50 flexiverter (with AUX slot)
FLX-DANTE	64x64 channel DANTE flexiverter (with AUX slot)
FLX-DANTE/SRC	64x64 channel DANTE flexiverter with integrated 64x64ch Sample Rate Converter
FLX-MADI	128x128 channel MADI SFP & MADI coaxial module (with AUX slot)

8.3. Warranty

We offer a full two (2) year warranty from the date of purchase. Within this period, we repair or exchange your device free of charge in case of any defect*. If you experience any problems, please contact us first. We try hard to solve your problem as soon as possible, even after the warranty period.
* Not covered by the warranty are any damages resulting out of improper use, willful damage, normal wear-out (especially of the connectors) or connection with incompatible devices.

8.4. Manufacturer contact

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8.5. Recycling

According to EU directive 2002/96/EU, electronic devices with a crossed-out dustbin may not be disposed into normal domestic waste. Please return the products back for environment-friendly recycling, we'll refund you the shipping fees.

8.6. Document Revision History

2: Added DIP6 description
1: Initial release

Document Revision: 2 · 2025-03-11

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