Smart Converters
PRODUCT LINE 2023
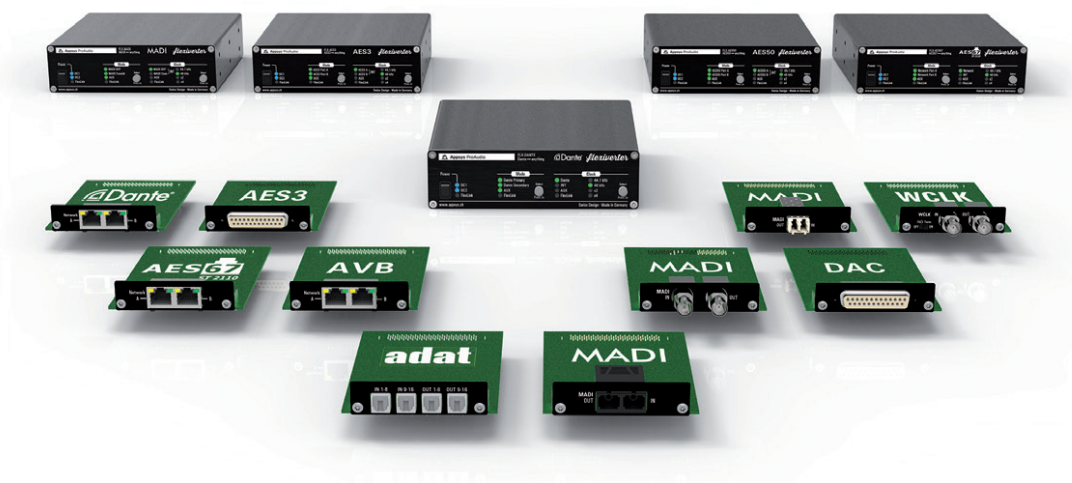
multiverter

MVR-mkII

flexiverter

Series

HIGHEST QUALITY CONVERSION BETWEEN ALL INDUSTRY FORMATS

Now with AES67

Dante™
SPOKEN HERE

MADI
OPTICAL/COAXIAL/SFP

MADI TP
DIGICO / STUDER

AES67
ST2110

AVB milan™

adat

AES50

AES3

DOWNLOAD PDF

The *flexiverter* Series

Modular Digital Converter System

flexiverter Series =
Ultra-compact converters (FLX) +
Switchable format boards (AUX)

A *flexiverter* is an ultra-compact box with a main format, dual power supply and a slot for a switchable AUX board, which adds the conversion format to the FLX unit.

At the moment **5 FLX** units and **10 AUX** boards are available (see next page). Format combinations provide the most common conversions with improved features and unique pairings (e. g. AES50 <> Dante, Dante <> Dante SRC, Dante <> AVB).

There is more: Thanks to the FlexLink technology, multiple FLX devices can easily be connected via usual HDMI cables, adding more conversion flexibility and a redundant power supply to the pack.

ClockShield technology delivers a reliable multichannel conversion between all established digital audio formats at maximum clock integrity. A loss of the clock signal can be bridged seamlessly and silently for up to a second.

Pick **two** of these formats and combine them in **one** 9.5 inch Flexiverter box:

Dante SPOKEN HERE (Now with AES67)	MADI OPTICAL/COAXIAL/SFP
adat	AES3
AES50	AVB
AES67 ST2110	Analog Out

Appsys ProAudio
The *flexiverter* Series

Ultra-compact converters (FLX) + Switchable format boards (AUX)

FLX-MADI
128 x128 ch. MADI SFP
& coaxial I/O

FLX-AES3
16 x 16 ch. AES/EBU

FLX-DANTE
64 x 64 ch. Dante

Dante
SPOKEN HERE
Now with AES67

FLX-AES67
128 x 128 ch. AES67

FLX-AES50
96 x 96 ch. AES50
prepared for MIDAS/
Behringer stagebox
remote control

FLX-AVB
128 x 128 ch. AVB
(MILAN)

AVAILABLE AUX BOARDS
- Dante
- MADI optical
- MADI coaxial
- MADI SFP
- ADAT
- AES3
- AES67
- Analog*
- HDMI
- WordClock I/O

* planned

3 possible Flexiverter applications

1 STAND ALONE
A SINGLE FLEXIVERTER WITH
AUX EXTENSION CARD

2 DUAL MODE: TWO FLEXIVERTERS CONNECTED
AS 1-TO-1 CONVERTER WITH MORE CHANNELS
(FITS INTO 1RU)

FlexLink

3 MULTIVERTER EXTENSION
A SINGLE FLEXIVERTER WITH AUX EXTENSION CARD

FlexLink

APPLICATION

1

STAND ALONE
A SINGLE FLEXIVERTER WITH FORMAT EXTENSION CARD

FLX-DANTE
64 x 64 ch. Dante

Now with AES67
Dante™ SPOKEN HERE

FLX-AES67
128 x 128 ch. AES67

FLX-MADI
128 x 128 ch. MADI SFP
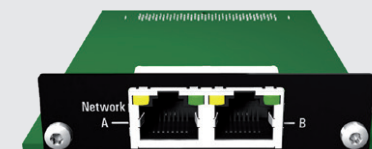& coaxial I/O

FLX-AES3
16 x 16 ch. AES/EBU

FLX-AES50
96 x 96 ch. AES50
prepared for MIDAS/Behringer
stagebox remote control

FLX-AVB
128 x 128 ch. AVB

Insert and switch any **AUX board** in every main **FLX unit**
and create the **converter of your choice**.

AUX-DANTE
64 x 64 ch. DANTE
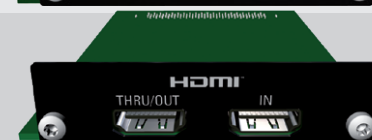16 x 16 ch. @ 192kHz

AUX-AES67
64 x 64 ch.

AUX-AES3
8 x 8 ch. AES3 I/O on 1x DB25,
fully transformer isolated

AUX-HDMI*
8 x 2 ch., HDMI 2.1
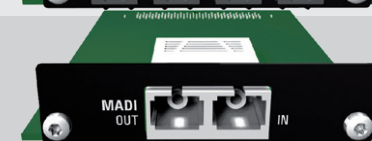Video + Audio passthru

AUX-ADAT
AUX-ADAT-64
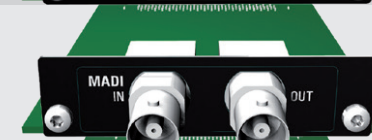16 x 16 ch. ADAT I/O (S/PDIF)
64 x 64 ch. ADAT I/O (S/PDIF)

AUX-MADI
OPTO
64 x 64 ch. MADI optical, SC
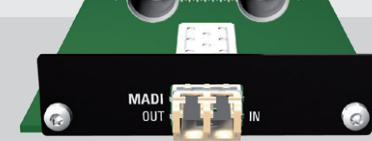(Multimode 125um 1310 nm)

AUX-MADI
COAX
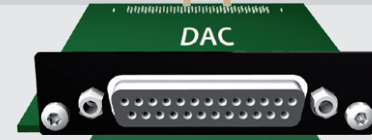64 x 64 ch. MADI for coaxial cable
(BNC connectors)

AUX-MADI
SFP
64 x 64 ch. MADI for
SFP modules

AUX-DAC*
8 ch. analog outputs
(1 x DB25)

AUX-WordClock
BNC WordClock I/O

* planned

APPLICATION

2

TWO FLEXIVERTERS CONNECTED
AS 1-TO-1 CONVERTER WITH REDUNDANT POWER SUPPLY

FlexLink

Possible converter pairings:

DANTE <> MADI	*MADI <> AES67*	*AES3 <> AES67*
DANTE <> AES50	*MADI <> AES50*	*AES3 <> AES50*
DANTE <> AES67	*MADI <> AES3*	
DANTE <> AES3		

Convert up to 4 formats with one pairing:

MADI <> Dante <> AVB <> AES3 <> AES67 <> AES50 <> ADAT

Signal splitting to AUX or FlexLink

The FlexLink connection

The FlexLink connection is designed to connect two Flexiverters, or one Flexiverter with the Multiverter. It provides:

- 192x192 channels bi-directional transmission of 24-bit uncompressed audio (fully transparent to AES3 compatible metadata bits)

- Super-low link latency of 4 samples (ca. 83μs)

- Dedicated, high-quality reference clock signal with automatic configuration

- Power supply for connected devices (to reduce cabling), alternatively serves as redundancy scheme when both devices are powered: in case of power failure, both devices keep working from the remaining power supply.

- Uses standard HDMI cables (with locking screws), to provide easy field replacement in case of defects.

Optional rackmounts available.

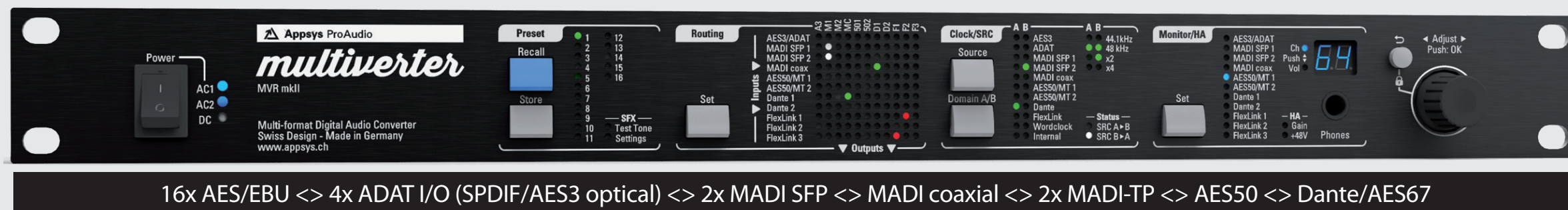Devices can be mounted "face-to-front" or "back-to-front".

③ MULTIVERTER EXTENSION
PROVIDING CHANNEL WISE ROUTING & OPTIONAL SRC

Connect one *flexiverter* via FlexLink to the *multiverter* MVR-mkII to add an additional format conversion, SRC or more channels.

16x AES/EBU <> 4x ADAT I/O (SPDIF/AES3 optical) <> 2x MADI SFP <> MADI coaxial <> 2x MADI-TP <> AES50 <> Dante/AES67

FlexLink

FLX-DANTE	**FLX-MADI**	**FLX-AES3**	**FLX-AES50**	**FLX-AVB**
Dante <> Dante SRC	MADI <> MADI bi-directional	AES3 <> all formats	AES50 <> all formats	AVB <> all formats
Dante <> MADI 128 Ch.	64 Ch. @ 96k MADI SRC	with optional SRC	with optional SRC	with optional SRC

FLX-AES67

AES67 <> all formats
with optional SRC

THE BACK PANEL: MOST FLEXIBLE

I/O ports for main format

e.g. 2 x Network for Dante,
MADI coaxial, AES3 D-SUB25

AUX port for optional format module

e.g. Dante, AES67, AVB, ADAT, AES3,
MADI optical/coaxial/SFP, Wordclock

**Status LEDs
for each port**

**DIP switches for
advanced configuration**

**USB for
firmware updates**

Power Supply

**FlexLink port (HDMI)
to connect to
Multiverter or
other Flexiverter**

SPECIFICATIONS

Dimensions	152x44x153mm (WxHxD) excluding connectors/buttons 152x44x169mm (WxHxD) including device-side connectors/buttons
Weight	560g
Power Consumption	+15V DC, 9W max (18W to power two devices via FlexLink)Triple-redundant input (2x DC, 1x via FlexLink)
Cable length	FlexLink 1m / 3ft. max. recommended
Sample rates	44.1kHz, 48kHz, 88.2kHz, 96kHz, 176.4kHz, 192kHz
Channel Counts	**FLX-Dante** 64x64 @ 48kHz 32x32 @ 96kHz 16x16 @ 192kHz plus additional AUX channels depending on AUX card

FLX-MADI
128x128 @ 48kHz
64x64 @ 96kHz, 32x32 @ 192kHz

FLX-AES3
16x16 @ 48/96/192 kHz (Single-wire)
8x8 @ 96kHz, 8x8 @ 192kHz (Dual wire), 4x4 @ 192 kHz (Quad wire)

FLX-AES50
96x96 @ 48kHz
32x32 @ 96kHz

FLX-AVB
128x128 @ 48kHz
64x64 @ 96kHz
32x32 @ 192kHz

AUX-ADAT
16x16 ADAT I/O. Supports also S/PDIF.

AUX-ADAT-64
64x64 ADAT I/O. Supports also S/PDIF.

AUX-AES3
8x8ch AES3 I/O on 1x DB25, fully transformer isolated

AUX-AES67
64x64 ch AES67 network card

AUX-HDMI
8x2 ch / Audio/Video passthru

AUX-DANTE
64x64ch DANTE network card

AUX-MADI-COAX/OPTO/SFP
64x64ch, supports 56/57/64 channel mode + user bit transparency

The *multiverter*

704x704 CHANNEL UNIVERSAL FORMAT CONVERTER


MADI OPTICAL+COAXIAL

MADI TP DIGICO/STUDER

adat 4 x 4

AES/EBU 16 x 16

AES50

Now with AES67
Dante SPOKEN HERE

What the *multiverter* will do for you:

- Interface your recording gear to any digital signal source.
- 704x704 channel-wise routing between all interfaces (192x192 on FlexLink).
- Adds *any* format to your production truck or OB.
- Dante<>Dante bridging of different networks with optional sample rate conversion (up to 64ch 96k<>48k bidirectional, 128x0ch unidirectional)
- Use your ethernet port as 64x64 recording interface with the Dante® Virtual Soundcard technology
- Sample-rate conversion between any interfaces using the additional SRC-64 plugin module.
- Send and receive low-latency, 64x64 audio over your standard ethernet networks.
- Lifts your legacy gear up to date.
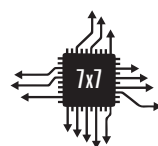
11 x 11 Interface Conversion & Routing

Integrated Headphone out +Test tone generator
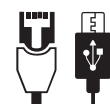
Network Remote USB Remote

Triple redundant Power Supply

Remote Control included

- Web remote via integrated webserver, or via USB (see Live Demo on our website)
- Integrated command line interface (telnet or UART)

All the magic in just 1 RU.

- Multiple conversions (i.e. Dante <> MADI and ADAT <> AES50) with each using the full channel count can run simultaneously.
- Preset store/recall (16 different setups)
- Headphone amplifier to monitor any incoming signal
- Asynchronous Sample Rate Conversion (128x0/64x64/0x128 channels) supported using the SRC-64 plugin module
- Test tone generator simplifies troubleshooting of complex setups
- Can be powered alone from industry standard 4-pin XLR plug battery packs
- MIDI embedding/de-embedding from MIDI jacks into MADI streams (RME-compliant)
- Transparent forwarding of MADI control data (i.e. headamp control, MIDI over MADI)
- **Headamp Remote Control for MIDAS/Behringer**
- AES50 AUX data (headamp control) passthru
- RS485 over MADI (DirectOut(R) compatible)

INPUTS / OUTPUTS

- 16 AES/EBU I/O
- 4x ADAT I/O
- 2x MADI SFP (accepts Ferrofish coax SFP)
- 1x MADI coaxial
- 2x MADI-TP
- 2x AES50
- Dante (64x64, prepared for 128x128)
- FlexLink port for connection to any Flexiverter

Optional Plug-in Module
SAMPLE RATE CONVERTER
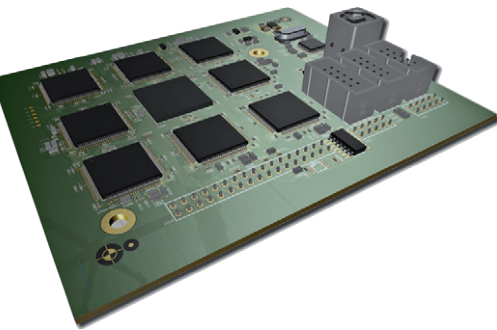
Convert sample rates between all of your interfaces! To add even more power to your **multiverter**, a SRC hardware module is available. The module features 64x64 channel bidirectional, or 128x0 channel unidirectional, asynchronous sample rate conversion between two arbitrary sample rates and interfaces.

- Top-notch performance: THD+N = -133dB typ, -120dB max.
- True asynchronous, bi-directional conversion of 64x64 channels
- Supports arbitrary sample rates in the range from 32...192kHz
- Special aggregation modes exist to handle 64ch@96k by using two inputs and/or outputs together
- Handles up to 128ch@48k, 64ch@96k, 32ch@192k
- Free selection of any multiverter interface as asynchronous input and/or asynchronous output
- Any number of MVR interfaces can be selected to run on an alternate clock domain.
- The SRC function will be automatically applied to channels routed between different clock domains.

Adapter for DiGiCo and Soundcraft/Studer
MTA-64 MADI-TP EXTENSION

The small Extender inline box enables the Multiverter to connect directly to DiGiCo and Soundcraft/Studer MADI-TP ports.
On the Multiverter side, audio is connected to the MADI-TP port, while power and configuration is taken from the Extension port (which is still available because it´s fed thru). Supported are all known pin-outs as well as an built-in MDIX feature which allows you to use straight Cat5 cables where normally crossover cables were required.

MVR-mkII Network-based Remote Control

Thanks to the integrated web server, the multiverter can be remotely operated from any browser. This is completely self-contained, platform independent and does not need any additional software. Web control is the preferred method because it offers channel-wise routing and provides the most convenient graphical interface.
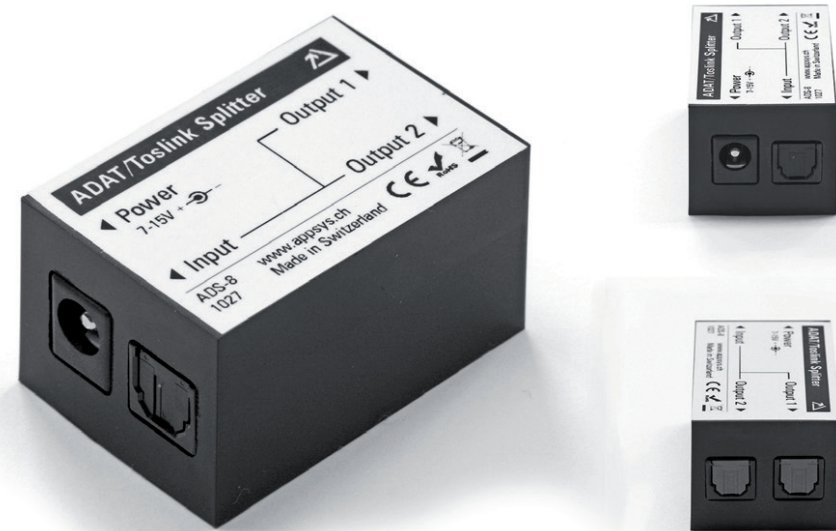
The web server runs on the Dante module, and can be configured to run on the Dante network or a on a separate network, isolated from the Dante audio.

SPECIFICATIONS

Dimensions / Weight	482x45x230mm (BxHxD)
Power consumption	8W typ., 30W max. Each AC input: 85..264VAC, 50-60Hz, 0.75A@115VAC / 0.5A@230VAC DC input: 9-18VDC (up to 30V tolerant), 2.5A peak
Channel count	704x704 total (up to 64x64 per interface) in x1 modes 352x352 (up to 32x32 per interface) in x2 modes 176x176 (up to 16x16 per interface) in x4 modes Multiple conversions (i.e. Dante <> MADI and ADAT <> AES50) with each using the full channel count can run simultaneously.
Sample rates	44.1 / 48 / 88.2 / 96 / 176.4 / 192 kHz +/-100ppm Varispeed operation is not supported
ADAT ports	4 input+4 output ports with 8ch@44.1/48kHz, 4ch@88.2/96kHz each Each port may be alternatively used as SPDIF or AES3 optical port with 2 channels @44.1/48kHz
RS485 port	Male D-Sub 9pin, Yamaha AD8HR compatible Pinout: 2=RX-, 3=TX-, 4=TX+, 5=GND, 6=RX+
FlexiLink port	HDMI connector type (Note: *NOT* HDMI compatible). 192ch@48kHz, 96ch@96kHz, 48ch@192kHz
MADI SFP port	Standard SFP slot. SFP1 equipped with standard multi-mode fibre (MM fibre), 1310nm, LC connector, up to 2km total length. No vendor lock (Appsys policy). Supports Ferrofish SFP Coax 64ch@44.1/48kHz, 32ch@88.2/96kHz, 16ch@176.4/192kHz, MIDI-over-MADI, RS485 embedding Transparent user bit forwarding
MADI BNC port	Standard AES10 coaxial port. Use with up to 100meters of 75 ohm coaxial cable 64ch@44.1/48kHz, 32ch@88.2/96kHz, 16ch@176.4/192kHz MIDI-over-MADI, RS485-over-MADI Transparent user bit forwarding
MADI TP port (shared with AES50)	AES-X 213 compatible. 64ch@44.1kHz, 56ch@48kHz, 32ch@88.2, 28ch@96kHz, 16ch@176.4kHz, 14ch@192kHz Pinout: MADI-TP on 4/5, 7/8 MIDI-over-MADI, RS485-over-MADI Transparent user bit forwarding Compatible to DiGiCo®/Soundcraft®/Studer®MADI-TP using the MTA-64 Adapter
AES50 ports (shared with MADI-TP)	AES50 3.1 compatible 48ch@44.1/48kHz, 24ch@88.2/96kHz Pinout: Data on 1/2, 3/6; Sync on 4/5, 7/8
Wordclock port	Output: 5.0Vpp nominal, able to drive two parallel 75 Ohm terminations; Input: 2.0Vpp...5.0Vpp
Dante/AES67 port	2x Gigabit Ethernet, configurable either as Switch or as Redundant connection in the Dante controller. Device prefix: MVR64 64ch@32/44.1/48kHz, 32ch@64/88.2/96kHz, 16ch@128/176.4/192kHz
MIDI port	Isolated input on 3.5mm TRS jack, MIDI output on 3.5mm TRS jack, MIDI THRU is activated by default Pinout according to MIDI-TRS specification
Headphones	2x125mW into 32Ohm (@0.01% THD+N) Bandwidth: 22Hz to 22kHz

ADS-8
ACTIVE 1:2 SPLITTER FOR ADAT AND OTHERS

ADX-8
OPTICAL-OVER-CAT5 EXTENDER FOR ADAT AND OTHERS

- Extends optical cables over up to 100m / 330ft of Cat5.
- Converts optical > Cat5 > optical
- Works with all formats (ADAT, SPDIF, AC-3 etc.) up to 96kHz
- Near-zero latency (nanoseconds range)
- Fully bit transparent
- Requires a single power supply only: Receiver is powered through Cat5

ADX-16
BIDIRECTIONAL ADAT-OVER-CAT5 EXTENDER

- Doubles any optical signal.
- Single-input, double-output: both outputs replicate exactly the input signal
- Works with all formats (ADAT, SPDIF, AC-3 etc.) up to 96kHz
- Near-zero latency (nanoseconds range)
- Fully bit transparent
- Acts also as signal repeater for double reach
- Active design overcomes the limitations of cheap passive splitters where the signal gets too weak for high-speed data

- Converts optical <> Cat5 <> optical
- Works with ADAT up to 192kHz
- Integrated Reclocking for superior signal integrity
- Near-zero latency (nanoseconds range)
- Fully bit transparent
- Requires a single power supply only: Receiver is powered through Cat5