Appsys ProAudio

SWISS DESIGN
Made in Germany

SMART CONVERTERS

PRODUCT LINE 2024

multiverter
MVR-mkII

flexiverter
Series

HIGHEST QUALITY CONVERSION BETWEEN ALL INDUSTRY FORMATS

Now with AES67 Dante™ SPOKEN HERE	MADI OPTICAL/COAXIAL/SFP/TP	MADI TP DIGICO / STUDER	AES67 ST2110	TDM
AVB™	adat	AES50	AES3	SDI

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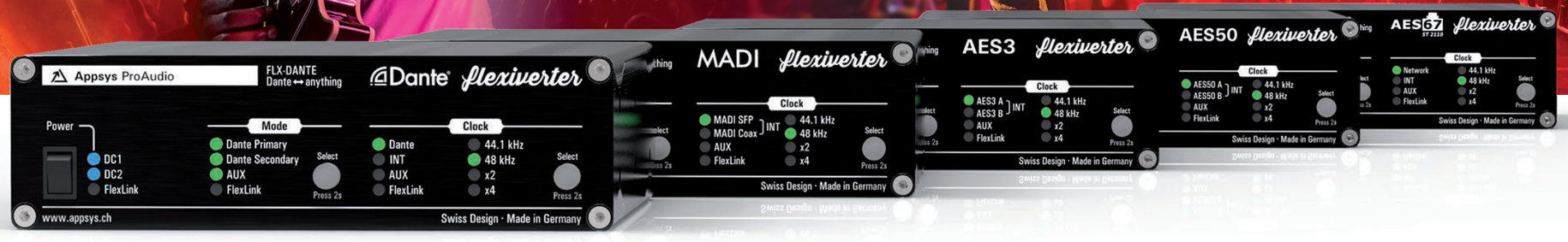
The *flexiverter* Series

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.

Many different FLX base units and 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:

Now with AES67
Dante™
SPOKEN HERE
with SRC

MADI
OPTICAL/COAXIAL/SFP/TP

adat

AES3
with SRC

AES50

AVB

AES67
ST2110

SDI 12G

TDM

HDMI

Appsys ProAudio

The *flexiverter* Series

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Ultra-compact format 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-AES3/SRC
16 x 16 ch. AES/EBU

FLX-DANTE
64 x 64 ch. Dante

Now with AES67
Dante SPOKEN HERE

FLX-DANTE/SRC
64 x 64 ch. Dante

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 / Dual coaxial
- MADI SFP / Dual SFP
- MADI Dual TP
- ADAT
- AES3
- WordClock I/O
- HDMI*
- SDI*
- Analog*

* 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)

3 **MULTIVERTER EXTENSION**
A SINGLE FLEXIVERTER WITH AUX EXTENSION CARD

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The *flexiverter* Series

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Sample Rate Conversion made easy.

FLX-DANTE/SRC ★ NEW

The FLX-DANTE/SRC is a compact DANTE-to-anything converter with built-in 64x64ch Sample Rate Converter (SRC).

It can convert 64x64ch of Dante to to any protocol installed into the AUX slot. For larger systems, the built-in channels plus everything which the AUX card provides are also available on the FlexLink port, making it possible to use it as extension to the MVR-mkII or another Flexiverter.

- Two DANTE ports on Ethercon connectors
- AUX port accepting any of the AUX Cards as conversion source/ destination
- When combined with AUX-DANTE, it acts as Dante/Dante bridge with full network and clock domain separation
- 64x64ch bi-directional Sample Rate Converter with superior quality.

FLX-AES3/SRC ★ NEW

The FLX-AES3/SRC is a compact AES3-to-anything converter with built-in Sample Rate Converters. It features 16x16 channels of AES3 , which can be converted to any protocol installed into the AUX slot.

Additionally, all AES3 inputs can be routed through individual built-in SRCs to match a common clock. For larger systems, the built-in channels plus everything which the AUX card provides are also available on the FlexLink port, making it possible to use it as extension to the MVR-mkII or another Flexiverter.

- 16x16 channels of AES/EBU, fully transformer isolated
- Inputs can optionally be routed over 8 individual SRCs, to convert streams with different clocks to house clock
- 8 different input clock domains converted to the main clock domain, with superior quality
- DB25 connector pinout (Tascam or Yamaha) selectable individually for each connector via internal jumpers

Common features

- **Samplerate Conversion with top-notch specifications: >120dB THD+N, >134dB DNR**,
- SRC can be bypassed when desired.
- AUX port accepting any AUX Card as conversion source/ destination
- Supports sample rates from 32 to 192kHz
- FlexLink port for lowest latency, bi-directional transfer of 192 channels audio, clock and power
- Remote control via USB: web remote (no software required), or UART command line
- Triple-redundant power supply

Additional features with MVR-mkII

- True channel-wise routing of all available channels (built-in plus AUX card)

APPLICATION

1

STAND ALONE

A SINGLE FLEXIVERTER WITH FORMAT EXTENSION CARD

FLX-DANTE
64 x 64 ch. Dante

FLX-DANTE/SRC NEW
64 x 64 ch. Dante
with bi-directional SRC

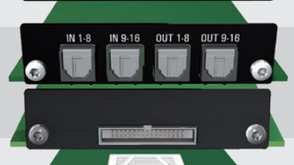
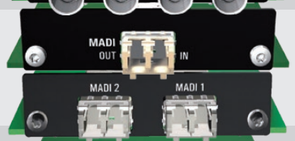
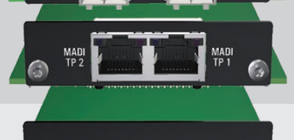
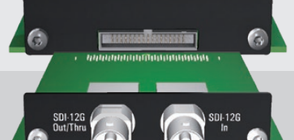
FLX-MADI
128 x 128 ch. MADI SFP
& coaxial I/O

FLX-AES3
16 x 16 ch. AES/EBU

FLX-AES3/SRC NEW
16 x 16 ch. AES/EBU
with individual SRCs

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

FLX-AVB *
128 x 128 ch. AVB

AUX-DANTE		64 x 64 ch. DANTE 16 x 16 ch. @ 192kHz
AUX-AES3		8 x 8 ch. AES3 I/O on 1x DB25, fully transformer isolated
AUX-HDMI*		16x16 ch., HDMI 2.1 extract & embed, video passthrough
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 **AUX-MADI-COAX DUAL** NEW		64 x 64 ch. MADI for coaxial (BNC) Dual version: 64 I/O at 96 kHz
AUX-MADI SFP **AUX-MADI SFP DUAL** NEW		64 x 64 ch. MADI for SFP modules Dual version: 64 I/O at 96 kHz
AUX-MADI TP **AUX-MADI TP DUAL** NEW		For DiGiCo and Soundcraft 64 x 64 ch. MADI for TP format Dual version: 64 I/O at 96 kHz
AUX-TDM* NEW		32x32 ch. TDM (Time Division Multiplexing/I2S)
AUX-SDI-12G NEW		16x16ch ch. extract & embed, video passthrough
AUX-WordClock		BNC WordClock I/O
AUX-DAC*		8 ch. analog outputs (1 x DB25)

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

* planned

APPLICATION

2

TWO FLEXIVERTERS CONNECTED

AS 1-TO-1 CONVERTER WITH REDUNDANT POWER SUPPLY

Possible converter pairings:

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

MADI <> AES67
MADI <> AES50
MADI <> AES3

AES3 <> AES67
AES3 <> AES50

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”.

APPLICATION

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

Dante <> Dante SRC
Dante <> MADI 128 Ch.

FLX-MADI

MADI <> MADI bi-directional
64 Ch. @ 96k MADI SRC

FLX-AES3

AES3 <> all formats
with optional SRC

FLX-AES50

AES50 <> all formats
with optional SRC

FLX-AVB

AVB <> 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** 16x16 ch., HDMI 2.1, extract & embed, video passthrough **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

Now with AES67 Dante SPOKEN HERE

MADI OPTICAL+COAXIAL

MADI TP DIGICO/STUDER

adat 4 x 4

AES/EBU 16 x 16

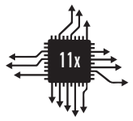
AES50

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

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

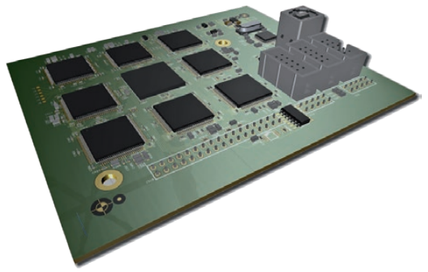
- Web remote via integrated webserver, or via USB (see Live Demo on our website)
- Integrated command line interface (telnet or UART)

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)

Optional Plug-in Module

SAMPLE RATE CONVERTER



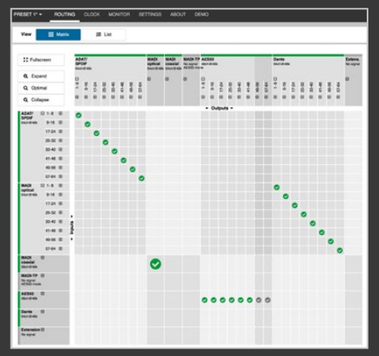
Convert sample rates between all of your interfaces! To add even more power to your ***multiverter***, a SRC hardware module is available. The module features 64x64 channel bidirectional, or 128x0 channel unidirectional, asynchronous sample rate conversion between two arbitrary sample rates and interfaces.

- 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.

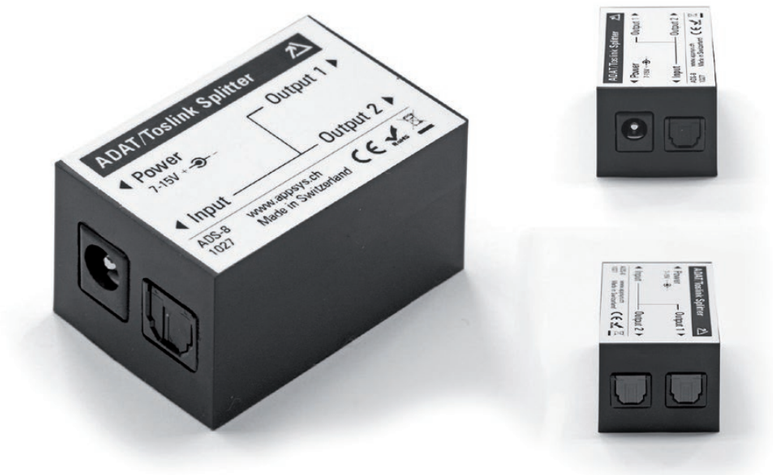
The web server runs on the Dante module, and can be configured to run on the Dante network or a on a separate network, isolated from the Dante audio.

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



- 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

ADX-8

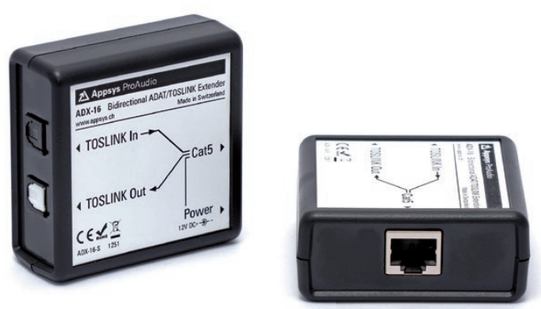
OPTICAL-OVER-CAT5 EXTENDER FOR ADAT AND OTHERS

- 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

- 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



Appsys ProAudio

Bullingerstr. 63/241
8004 Zürich
Switzerland

Phone: +41 43 537 28 51
Email: info@appsys.ch

More information
www.appsys.ch

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