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# **Bidirectional ADAT/ TOSLINK Extender Kit ADX-16**

User's Manual

**((en))**

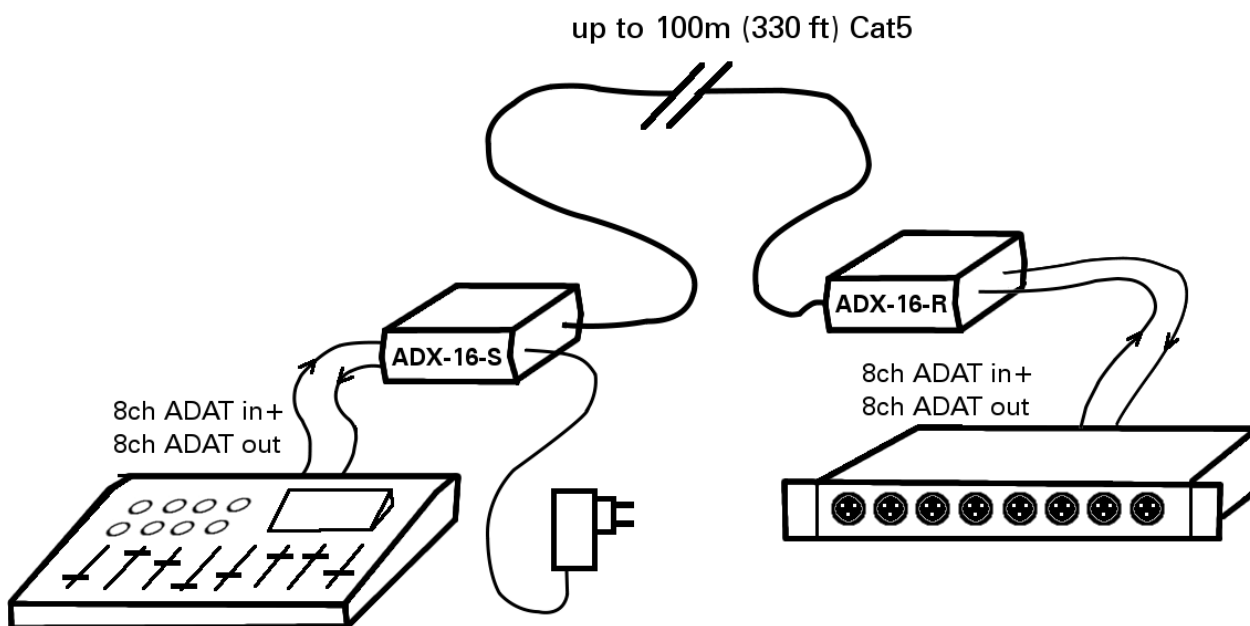
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## 1. KIT CONTENTS

The kit contains everything you need to extend a bidirectional ADAT Lightpipe (TOSLINK) connection up to 100m (330ft.) over Cat5 cable.

- Converter Box ADX-16-S (1xTOSLINK In + 1xTOSLINK Out to Cat5 with power supply)
- Converter Box ADX-16-R (1xTOSLINK In + 1xTOSLINK Out to Cat5)
- AC adapter
- This manual

## 2. USAGE



### 2.1. Description

The ADX-16 Kit has been designed to overcome the length limitations (5m/16 ft) of optical TOSLINK® interconnects running ADAT Lightpipe®, S/PDIF® and other protocols, and to provide a more robust alternative to sensitive Plastic Optical Fiber (POF) cable. Although longer optical cables are sometimes available, they do not guarantee a reliable connection because they attenuate optical signals too much and make the proper distinction of 0's and 1's in the digital signal difficult. A typical indication for such problems are clicks, pops and crackles appearing in the transmitted audio signal.

The ADX-16 solves these problems by converting the optical signals to electrical ones, which can be losslessly transmitted over up to 100 meters using ubiquitous and cheap Cat5 cable. Moreover, the ADX-16 reduces cabling by transmitting a bidirectional signal (that is, one TOSLINK connection in either direction) together with power for the second unit over a single Cat5 cable.

### 2.2. Applications

- Economic digital 8x8 snake with lowest latency
- Recording of 8 channels from a remote location, with master clock transmitted to the remote unit
- Interconnection of ADAT enabled equipment (e.g. DAWs and digital mixers)
- If analog conversion is needed at one or both ends, we recommend using 8-channel ADC/DACs (e.g. Behringer ADA8000 or Focusrite Octopre mkII Dynamics) on the respective ends

### 3. INSTALLATION

#### First ADX-16 box (with power supply jack, "ADX-16-S")

- Connect the supplier AC adapter to the "Power" jack
- Connect the optical output of your first device (e.g. mixing desk) to the "TOSLINK In" jack, and the optical input to the "TOSLINK Out" jack.

#### Second ADX-16 box ("ADX-16-R")

- Connect the optical output of your second device (e.g. DAC/ADC) to the "TOSLINK In" jack, and the optical input to the "TOSLINK Out" jack.
- The second box does not need a separate power supply because it is powered from the first one over the Cat5 cable.

#### Cat5 connection

- Use up to 100m (330 ft) Cat5(e), Cat6(e) or Cat7 cable to connect the first ADX-16 box to the second one. Note: For the ADX-16's signal transmission, the quality of the cable doesn't matter much (we use 100 meters of the cheapest cable we were able to get for testing). However, we recommend using good quality cable if mechanical stress is an issue.



**CAUTION:**

Use the Cat5 cable ONLY to connect the ADX-16 boxes together!

NEVER connect any ADX-16 device to a computer network port, network switch or likewise! The ADX-16 uses a proprietary protocol which is incompatible with Ethernet equipment, and such a connection may damage both the ADX-16 and the connected device!

### 4. SPECIFICATIONS

Parameter	Value																											
Maximum length of Cat5 cable	100m / 330 ft																											
Supported data formats	ADAT® (8ch@48kHz 4ch@96kHz/SMUX, 2ch@192kHz/QMUX per direction) S/PDIF (up to 2ch@96kHz per direction) Dolby® Digital 5.1 (AC-3) DTS® all other formats capable of TOSLINK transmission Note: Both directions operate independent from each other																											
Latency added to the link	< 1µs when run over 100m																											
Cat5 cable pin assignment	<table border="1"> <thead> <tr> <th>Pin</th> <th>Color</th> <th>Signal</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>orange/white</td> <td>TX DATA +*</td> </tr> <tr> <td>2</td> <td>orange</td> <td>TX DATA -</td> </tr> <tr> <td>3</td> <td>green/white</td> <td>RX DATA + *</td> </tr> <tr> <td>4</td> <td>blue/white</td> <td>+12V</td> </tr> <tr> <td>5</td> <td>blue</td> <td>+12V</td> </tr> <tr> <td>6</td> <td>green</td> <td>RX DATA - *</td> </tr> <tr> <td>7</td> <td>brown/white</td> <td>GND</td> </tr> <tr> <td>8</td> <td>brown</td> <td>GND</td> </tr> </tbody> </table> <p>* TX/RX functions seen from unit with power connector, mapped to RX/TX on the other unit.</p>	Pin	Color	Signal	1	orange/white	TX DATA +*	2	orange	TX DATA -	3	green/white	RX DATA + *	4	blue/white	+12V	5	blue	+12V	6	green	RX DATA - *	7	brown/white	GND	8	brown	GND
Pin	Color	Signal																										
1	orange/white	TX DATA +*																										
2	orange	TX DATA -																										
3	green/white	RX DATA + *																										
4	blue/white	+12V																										
5	blue	+12V																										
6	green	RX DATA - *																										
7	brown/white	GND																										
8	brown	GND																										

Parameter	Value
Power supply	12V DC, 150mA. Plug: OD=5.5mm, ID=2.5mm, center positive
Operating temperature	0...50°C
Storage temperature	0...70°C, non-condensing
Dimensions	LxBxH: 66.5x66.5x28mm (each unit)
Weight	60g (each box)

## 5. APPENDIX

### 5.1. 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 (including, but not limited to, Ethernet equipment and third-party power supplies).

### 5.2. Contact

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Switzerland	

### 5.3. 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.

### 5.4. About this document

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Document Revision: 1 · 2013-01-04

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