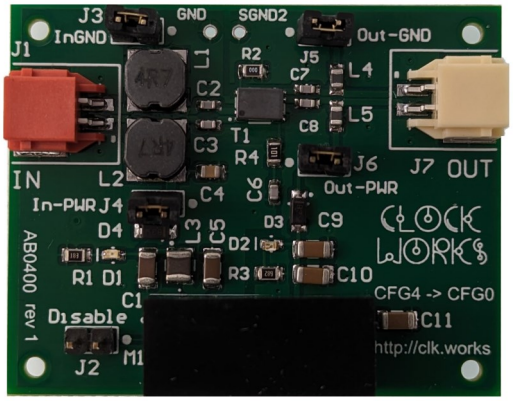
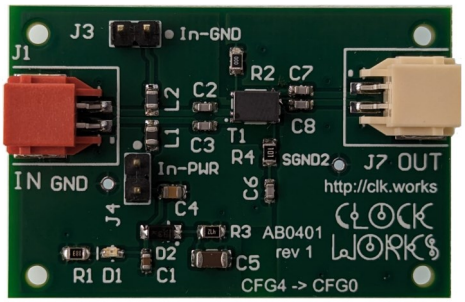
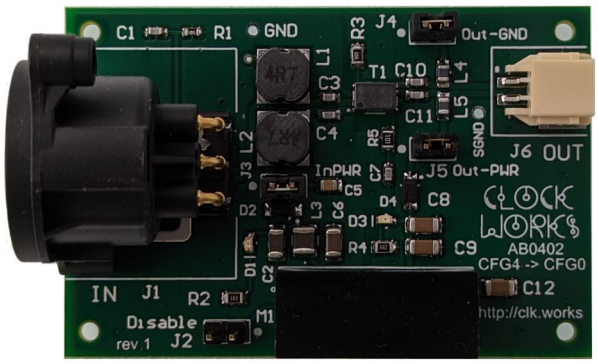


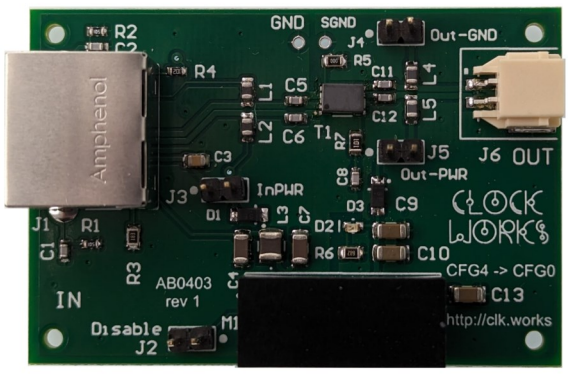
AB0400



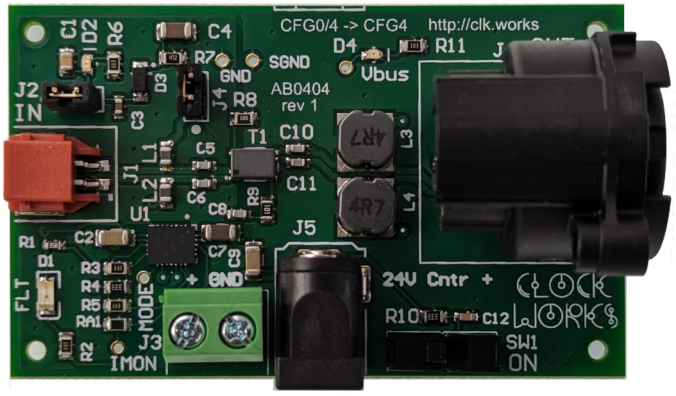
AB0401



AB0402



AB0403



AB0404

CLOCKWORKS Signal Processing

A²B FORMAT CONVERTERS

SUPPORTS CFG0 AND CFG4 POWER WITH AD242X AND AD243X DEVICES

Five modules to interconnect different generations of A²B systems

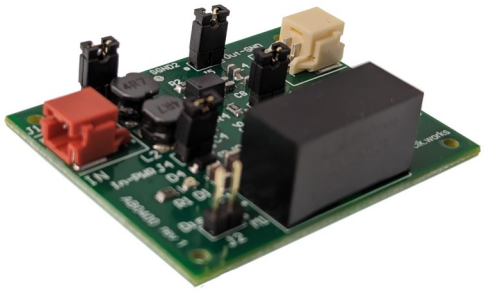
- All versions provide galvanic isolation of input (upstream) to output (downstream).
- Provides isolated CFG0 (9V) or CFG4 (24V) phantom power for downstream A²B nodes with 2 wire (CFG0 & CFG4) or XLR (CFG4) bus power.
- No software needed, totally transparent to A²B bus operation.
- Great way to protect non-24V systems from an oops during development.
- Fast turn custom versions with your own connector types to simplify integration with ADI EVM systems during development.
- 2 pin Duraclik connector compatible with all Clockworks products.

Introduction

Analog Devices' A²B system allows up to thirty two 24 bit 48 kHz data (audio) channels to be carried bidirectionally over twisted pair wire between multiple nodes. Supporting up to 30 meters of cable between nodes it provides a low cost way to create dispersed audio processing systems.

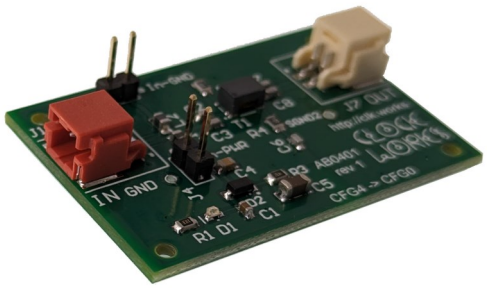
A²B is a trademark of Analog Devices Inc.

© Clockworks Signal Processing LLC



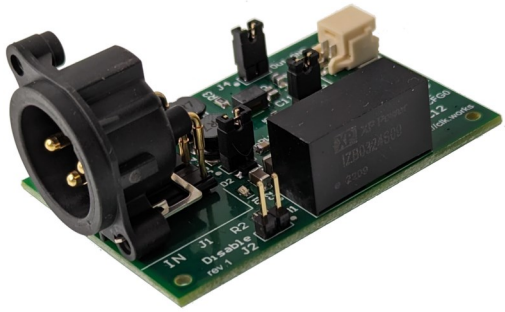
AB0400 2 pin CFG4 power to 2 pin CFG 0

- Use for connecting AD243x systems to AD242x systems
- Great way to use AD2428 based peripheral boards with AD2437 systems.
- Full isolation (data and power) between upstream and downstream. Upstream CFG4 node should be set to force 24V as always on.



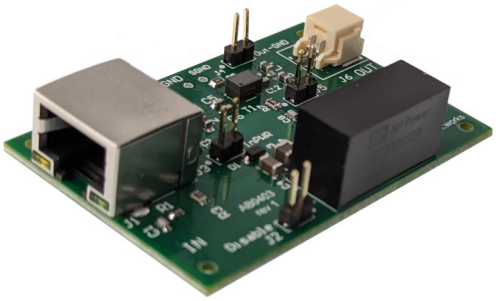
AB0401 2 pin CFG0/4 power to 2 pin—no bus power

- Use for connecting AD243x systems to AD242x systems
- Great way to use AD2428 based peripheral boards with AD2437 systems or vice versa.
- No power so can be used in either direction, as well as provides galvanic isolation in any A^2B system.



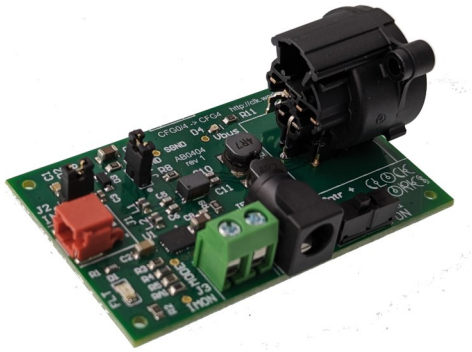
AB0402 XLR CFG4 power to 2 pin CFG 0

- Use for connecting AD243x systems to AD242x systems
- Great way to use AD2428 based peripheral boards with AD2437 systems.
- Full isolation (data and power) between upstream and downstream. Upstream CFG4 node should be set to force 24V as always on.



AB0403 RJ45 CFG4 power to 2 pin CFG 0

- Use for connecting AD243x systems to AD242x systems
- Great way to use AD2428 based peripheral boards with AD2437 systems.
- Full isolation (data and power) between upstream and downstream. Upstream CFG4 node should be set to force 24V as always on.



AB0404 2 pin CFG0/4 power to XLR CFG 4

- Use for connecting AD242x or AD243x systems to AD243x systems.
- Great way to provide more bus power to larger networks.
- Use AD2437 boards with AD2428 systems.
- External 24V input with local 2A current limiting.
- Full isolation (data and power) between upstream and downstream. Downstream node must accept 24V always on bus power.

DuraClik is a trademark of **molex**.

© **Clockworks Signal Processing LLC**

Clockwork's A^2B modules provide an off the shelf solution to developers and OEMs needing a way to develop and ship products that include A^2B but don't want to delay their projects working out their own A^2B designs.

Clockworks offers 4 different modules, two based on the AD2428 and two based on the AD2437. They offer a common footprint and set of features consistent with the capabilities of the two different parts.

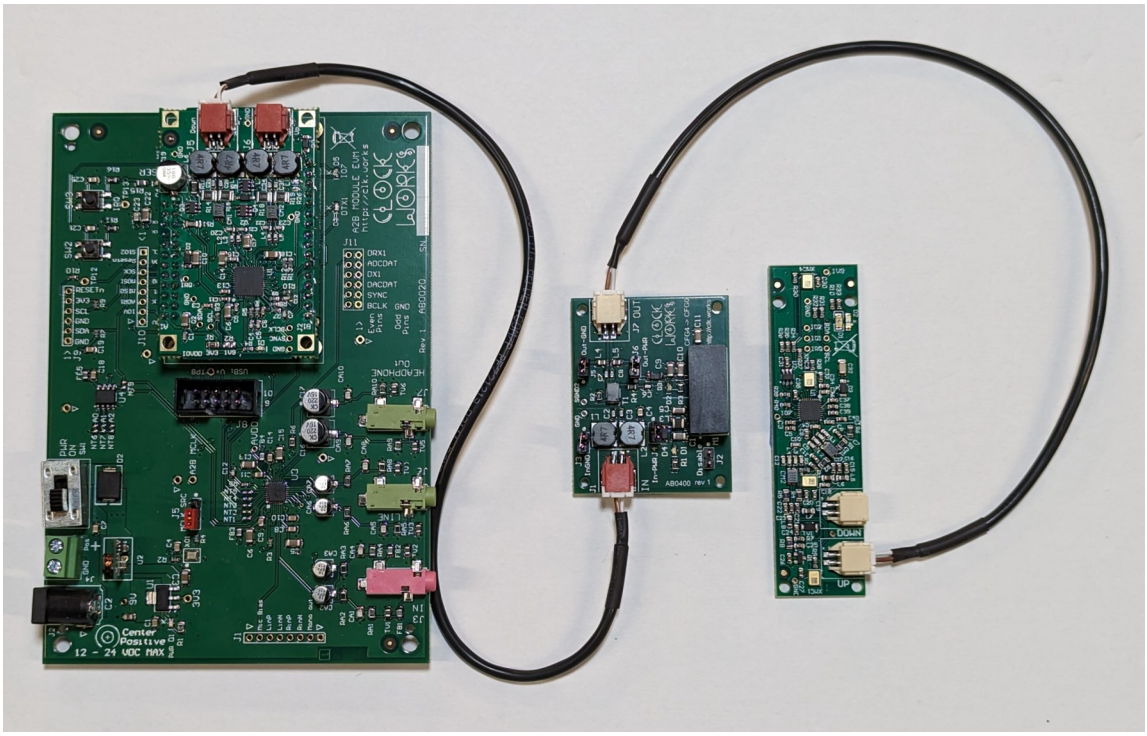
In addition to the EVM board Clockworks offers a range of breakout and microphone modules to provide fast, low risk A^2B system development.

Most Clockwork's products use the 2 pin Duraclik (molex) connector that is used on many of ADI 's EVM products. The red color indicates a port that can provide or handle CFG4 power up to 24V and up to 2 amps. CFG0 power is limited to 9V ant 300 mA. Adi has defined three different ways to deliver CFG4 bus power; the 2 wire scheme already discussed, a standard 3 pin XLR, and a RJ45.

Clockworks offers 2 pin Durclik cables in 0.3m, 1m, and 4m lengths. XLR systems should use DMX style cables. RJ45 should use CAT6 cables for best performance.

General information about the converter modules

Board schematics, 3D PDFs, and .step files for all 5 modules are available from the Clockworks website and provide the best explanation of the details of each module.



Example of a system consisting of Clockworks' AB0020 (AD2437 EVM) connected to AB0400 module to prived CFG0 power to bus powered 4 channel microphone array (Clockworks' AB0204)