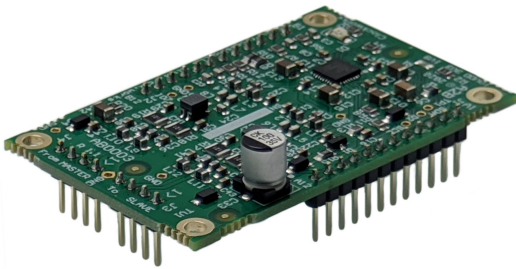
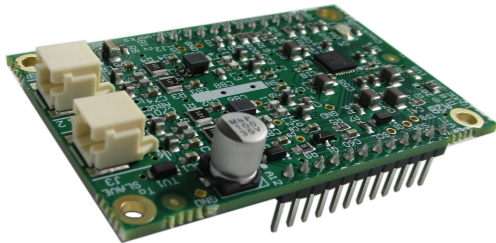


## Signal Processing

### A<sup>2</sup>B MODULE HARDWARE SYSTEMS GUIDE



### A<sup>2</sup>B<sup>®</sup> - I<sup>2</sup>S MODULE FOR OEM APPLICATIONS



### A<sup>2</sup>B<sup>®</sup> - I<sup>2</sup>S MODULE FOR DEVELOPMENT APPLICATIONS

### SUPPORTS ANALOG DEVICES



## Summary

- Clockworks offers the widest selection of hardware for developing A<sup>2</sup>B<sup>®</sup> applications.
- Two modules for A<sup>2</sup>B<sup>®</sup> interfacing to I<sup>2</sup>S and I<sup>2</sup>C devices form the core of the module offerings
  - AB0001 includes the standard Molex DuraClik A<sup>2</sup>B connector
  - AB0003 has a header for A<sup>2</sup>B to allow custom connectors for A<sup>2</sup>B
    - AB0003 available in Local powered and Phantom powered versions
- Over a half dozen mating options for prototype system building

## Introduction

Analog Devices' A<sup>2</sup>B 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 15 meters of cable between nodes it provides a low cost way to expand audio and signal processing systems.

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

There are two 12 pin single row .1" (2.54 mm) connectors (male pins) on the bottom side of the module. They mate with standard single row headers. These carry power and all of the AD2428's digital I/O.

On the AB0003 there are two additional 4 pin .1" (2.54 mm) connectors carry the up and down stream A<sup>2</sup>B ports.

A<sup>2</sup>B, SigmaDSP, SigmaStudio, and SHARC are trademarks of Analog Devices Inc.

## OEM A<sup>2</sup>B module versions

This board is available in two versions, one for use with local power, and the other for A<sup>2</sup>B bus (phantom) power.

## Module IO voltage

The I/O voltage is set to 3.3V by default. If ordered with the EVMA2BMIC 8 channel microphone array or AB0105 4 channel mic board then the A<sup>2</sup>B module is set to 1.8V.

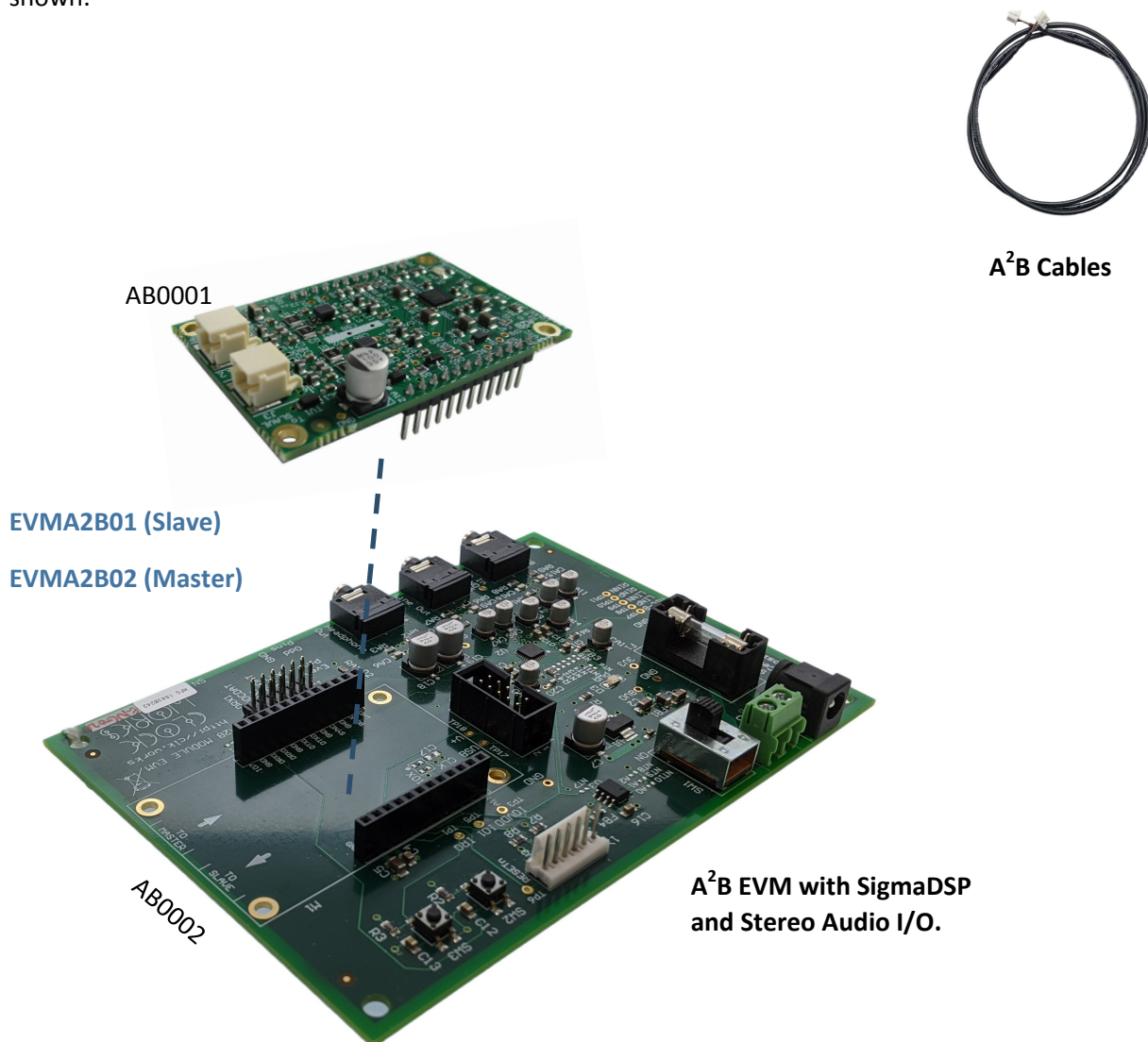
## Software support

ADI provides both the SigmaStudio A<sup>2</sup>B add-ons and an A<sup>2</sup>B software stack for the AD2428. Both of those work out-of-the-box with the Clockworks modules, though for a master node an I<sup>2</sup>C connection to the USBi emulator is required.

## Configurations

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The diagrams that follow illustrate the boards that make up various EVM kits to illustrate the ways various functions can be created. The board sets are available as a complete kit (SKU in blue text) for easy ordering. For more information see the respective datasheets for the boards shown.



AB0001

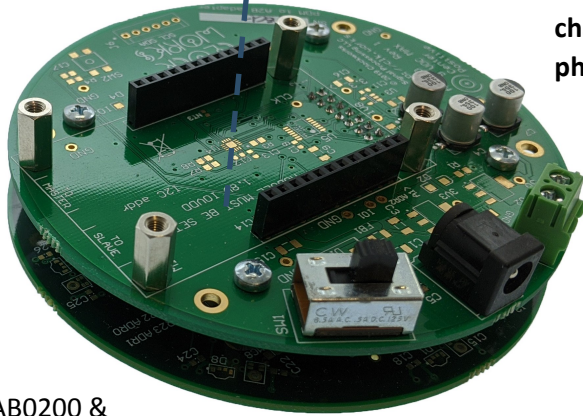


1.8V IO

EVMA2BMIC

**A<sup>2</sup>B EVM with 8 channel microphone array**

*Fixed price fast turn microphone array customization service available.*



AB0200 &  
AB0100



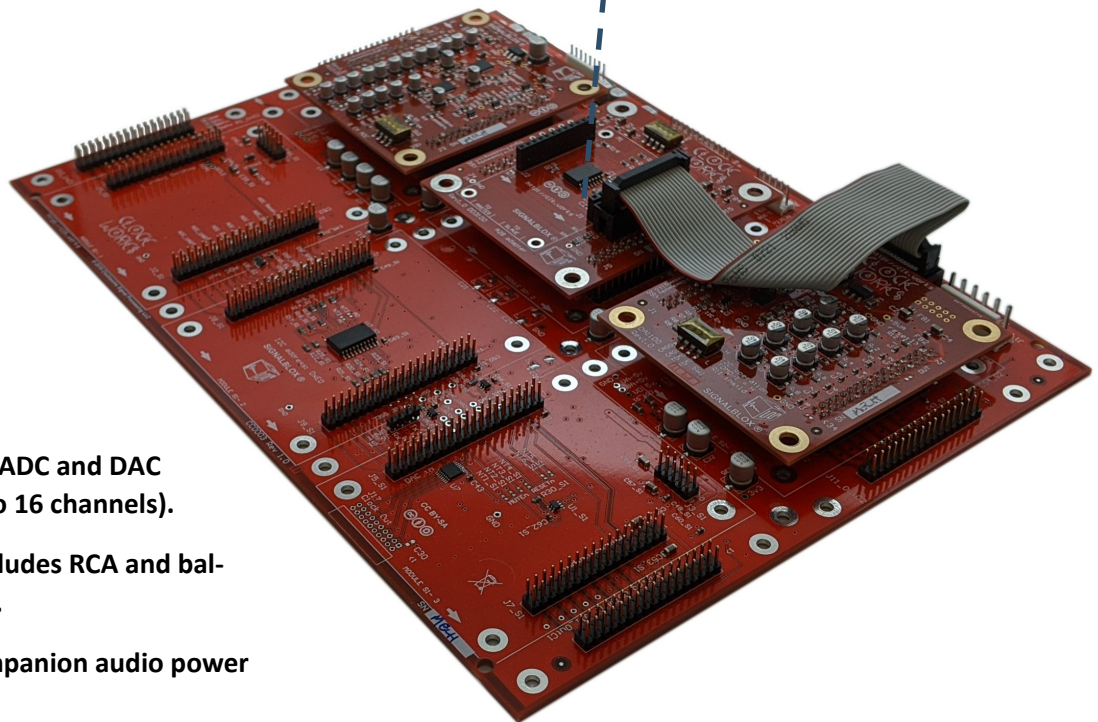
AB0001

SYS05

**A<sup>2</sup>B 8 channel ADC and DAC (expandable to 16 channels).**

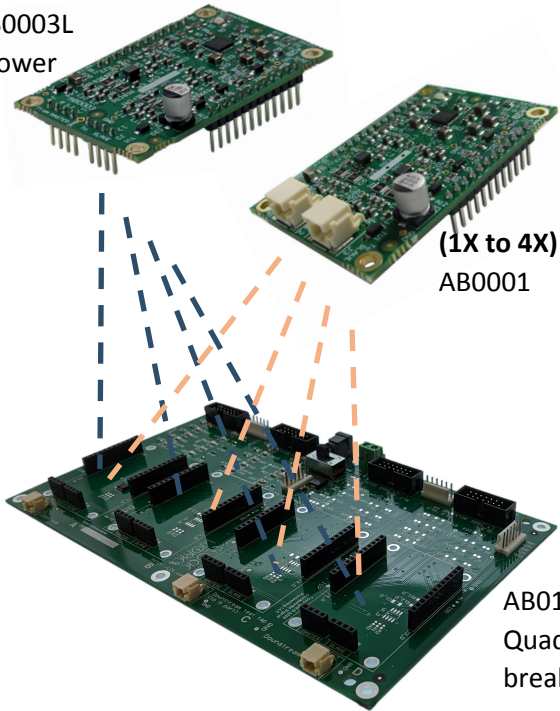
**Analog I/O includes RCA and balanced options.**

**Low noise companion audio power supply.**



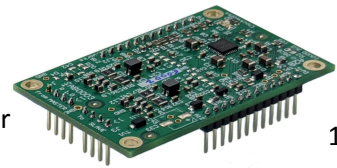


**(4X) AB0003L**  
Local power



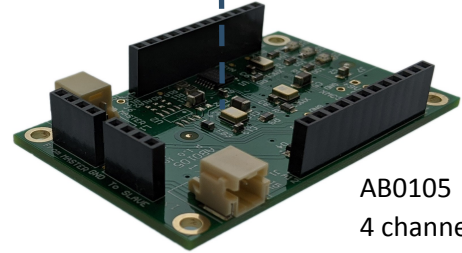
**(1X to 4X)**  
AB0001

AB0003P  
Phantom power



1.8V IO

EVMA2B05



AB0105  
4 channel microphone array

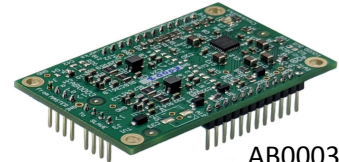
AB0109  
Quad carrier with I/O breakout

There are four possible EVM configurations using the AB0003P/L and AB00106P/L, AB0108, or AB0110 modules, which take on different part numbers when configured for local or phantom power. The decision tree for a particular EVM choice depends on how you intend to emulate your final system.

AB0003L  
Local power



AB0003P  
Phantom power



EVMA2B03ML

EVMA2B03MX

EVMA2B03SL

EVMA2B03SP



AB0110  
I/O module for local power and master node. Built in BLCK and SYNC generator.

AB0108  
I/O module for local power and master node. External BLCK and SYNC required.

AB0106L  
I/O module for local power  
(Slave node only)

AB0106P  
I/O module for phantom power  
(Slave node only)