

OutBox X2 Overview

The OutBox X2 CobraNet Audio Output Interface is a cost effective two output line level wall box. The X2 features two balanced outputs. The X2 is designed to fit into a standard dual gang junction box and is PoE enabled, so all connectivity (both power and audio data) to the X2 is provided by a single CAT-5 cable.

Applications

Convenient, wall mounted line level output drops for:

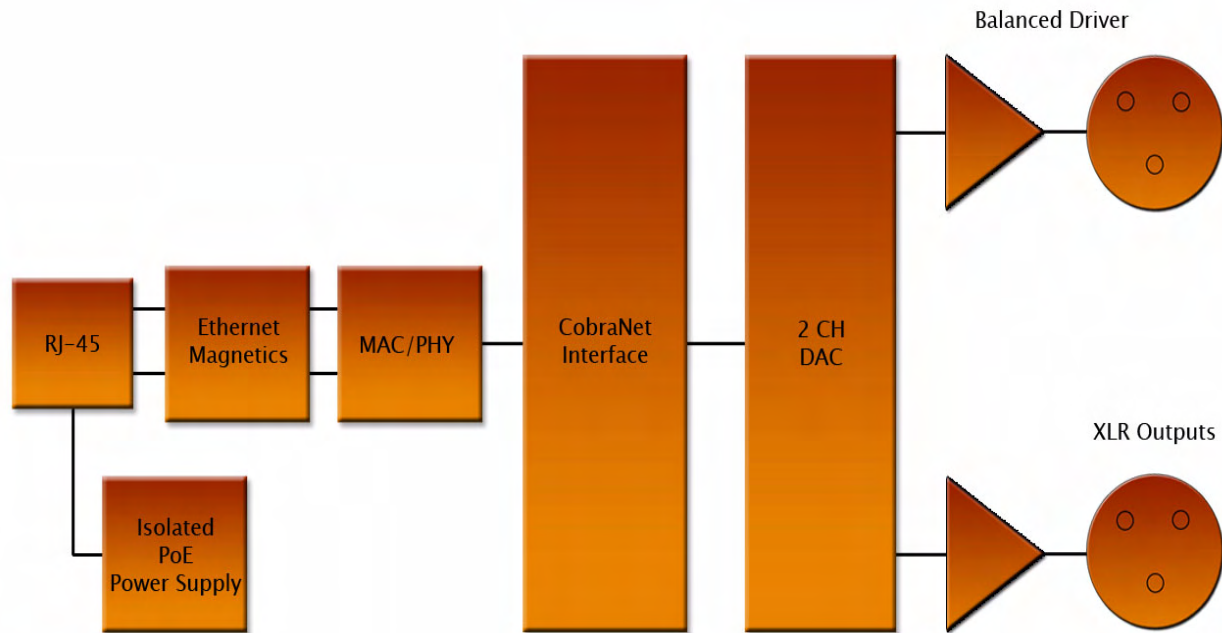
- Hotel ballrooms
- Conference/meeting centers
- Conference rooms
- Sports facilities
- Convention centers

Features

- Two balanced male XLR output connectors
- Mounts in a standard dual gang junction box
- PoE powered from a standard PoE network switch
- Enclosure size is 2.75"H x 3.5"W x 1.875"D



OutBox X2 Block Diagram



Specifications in Brief:

Line Output Type:	Balanced or Unbalanced
Maximum Output Levels:	$\geq +10\text{dBu}$ balanced, $+4\text{dBu}$ unbalanced
Output Impedance:	200Ω balanced, 100Ω unbalanced
Noise:	-83dBu for Line mode
Frequency Response:	$20\text{Hz}-20\text{kHz}$, $\pm 1\text{dB}$ with a $100\text{K}\Omega$ load impedance
System THD:	$<0.05\%$, 1kHz , 3dB below ADC clipping
Outputs:	Non-latched XLR output connectors
Power Consumption:	4W
PoE Class:	Class 2 802.3af PoE PD Compliant
Dimensions:	$3.5'' \text{ W} \times 2.75'' \text{ H} \times 1.875'' \text{ D}$

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CDK-8 Overview

The CDK-8 is a low cost CobraNet interface module that provides OEMs a simple and cost effective means of adding CobraNet audio networking capability to their products. The CDK-8 supports 8 bidirectional audio channels, user programmable DSP processing, and is available with and without a Host Management Interface (HMI) port.

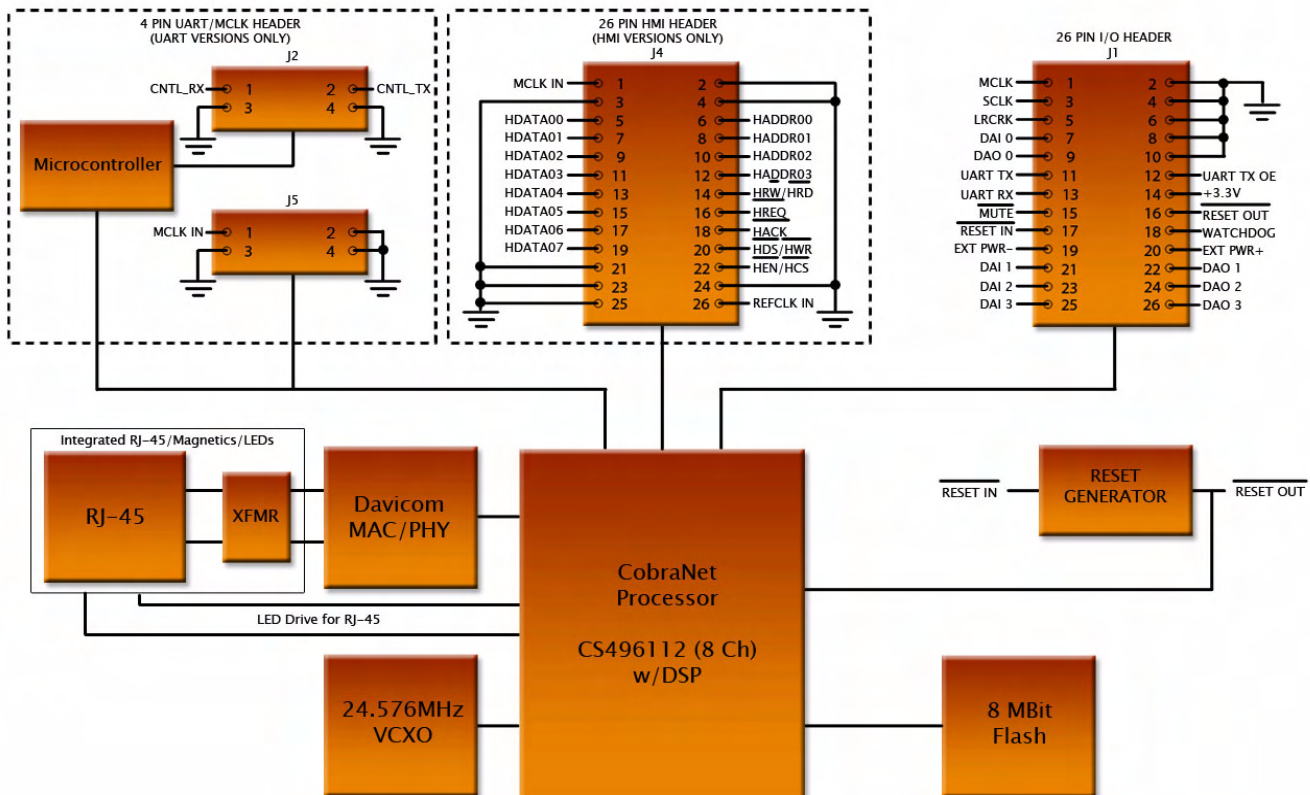
Applications

- Powered loudspeakers
- Multi-channel paging systems
- Security systems
- Two-channel and multi-channel amplifiers
- Residential multi-zone audio networking

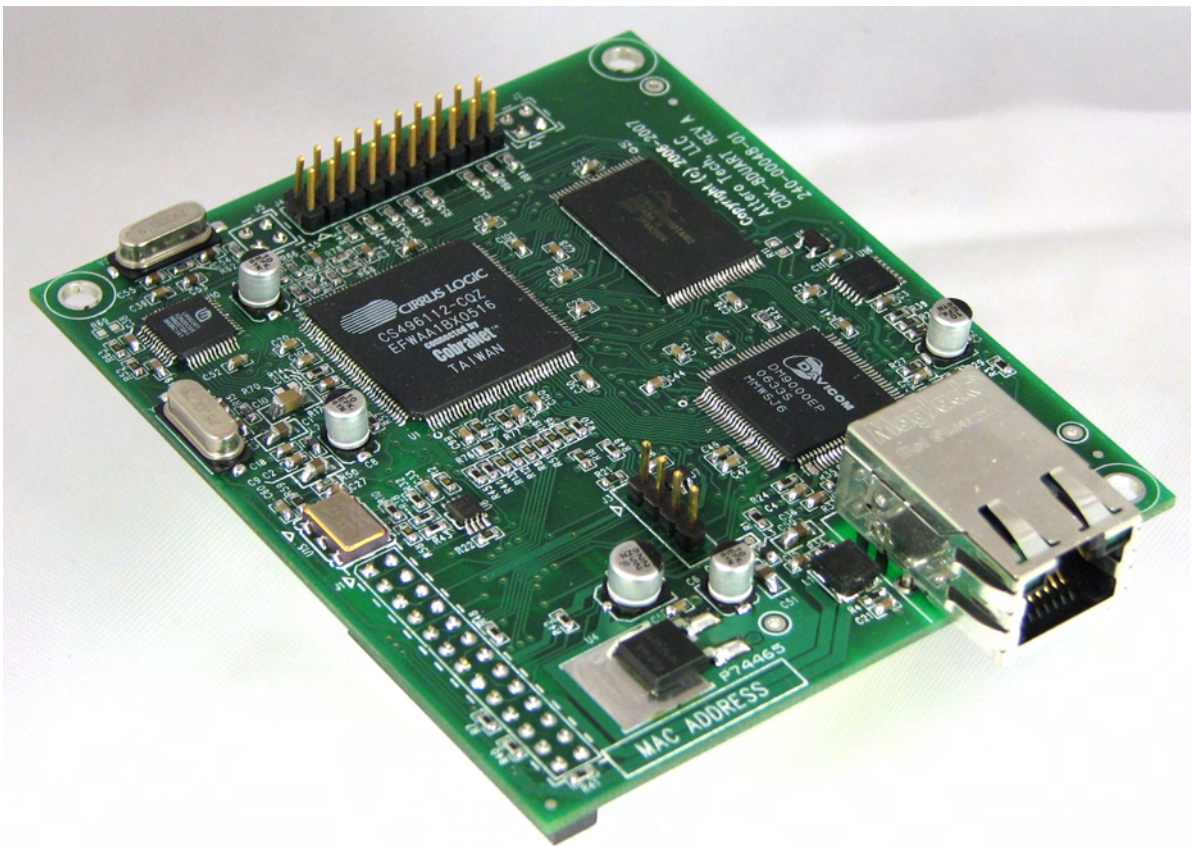
Features

- 100BASE-Tx, 100Mbps, full duplex Ethernet, fully compliant with IEEE 802.3u
- Support for 48/96kHz sampling rates at up to 24 bits resolution
- Serial bridging supported for transmission of control and metadata over the audio network
- SNMP agent for control, monitoring, and management
- TFTP support for firmware updates over the network
- Can be powered through the RJ-45 jack (external regulation required)
- Status LEDs for Link, Activity, and CobraNet conductor/performer
- Compact 3"x3" form factor (3"x3.5" w/HMI support)

CDK-8 Block Diagram



CDK-8DUART CobraNet Interface Module



Ordering Information:

Part Number	Description
CDK-8D	8 Channel Interface with user DSP
CDK-8DHMI	8 Channel Interface w/ parallel HMI port and user DSP
CDK-8DUART	8 Channel Interface w/ serial HMI port and user DSP

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CobraNet LE Reference Design Overview

The CobraNet LE Reference Design shows the use of CobraNet LE technology for low cost CobraNet endpoint applications. CobraNet LE is a highly integrated, cost-effective approach for CobraNet designs with 2 channels in and out. In addition to CobraNet audio networking, CobraNet LE implements a serial host management interface (SHMI), serial bridging, 8 GPIO pins, and 8 10 bit ADC channels.

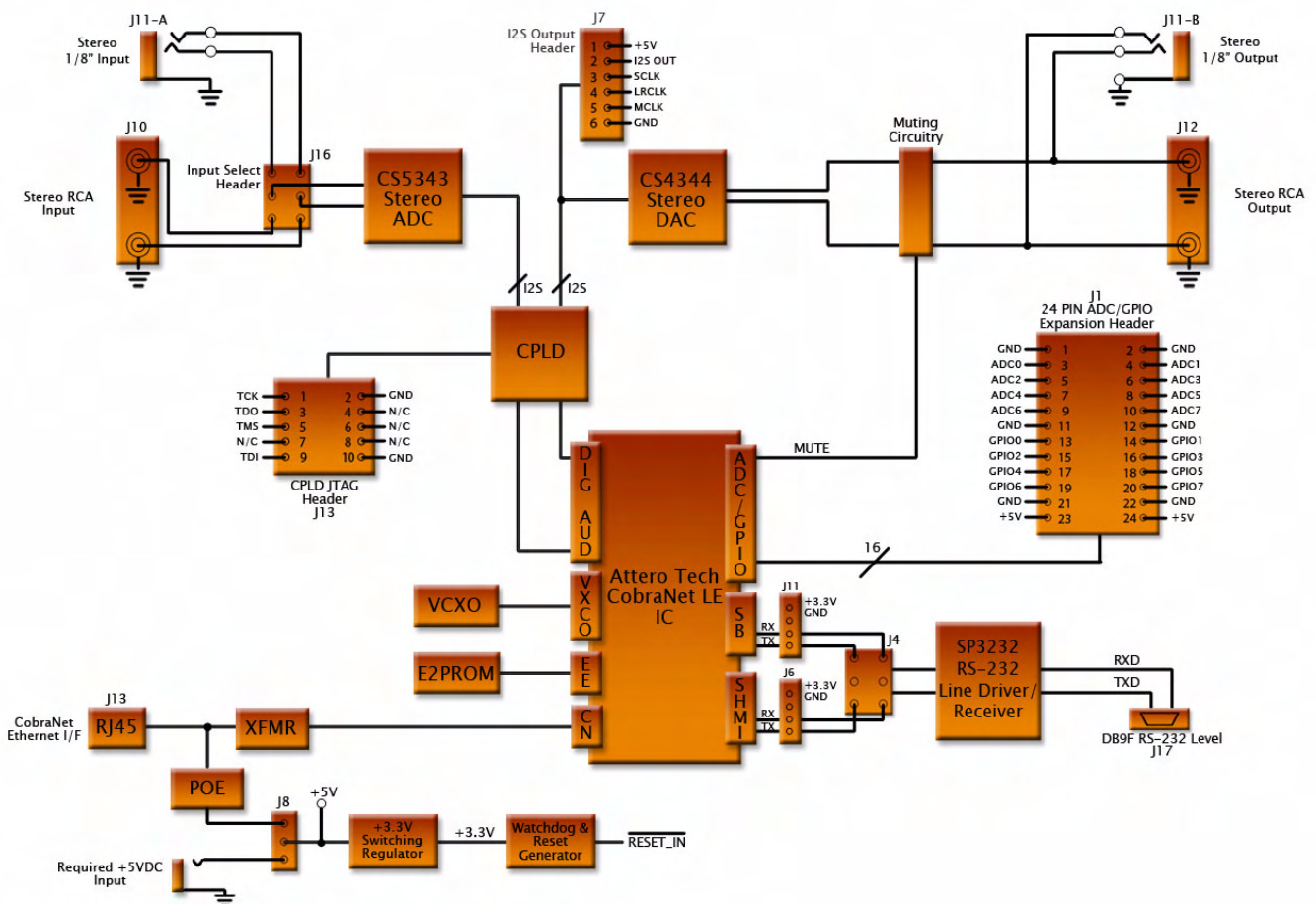
Applications

- Allows complete evaluation of all CobraNet LE functionality
- The CobraNet LE Reference Design is a fully functional CobraNet node

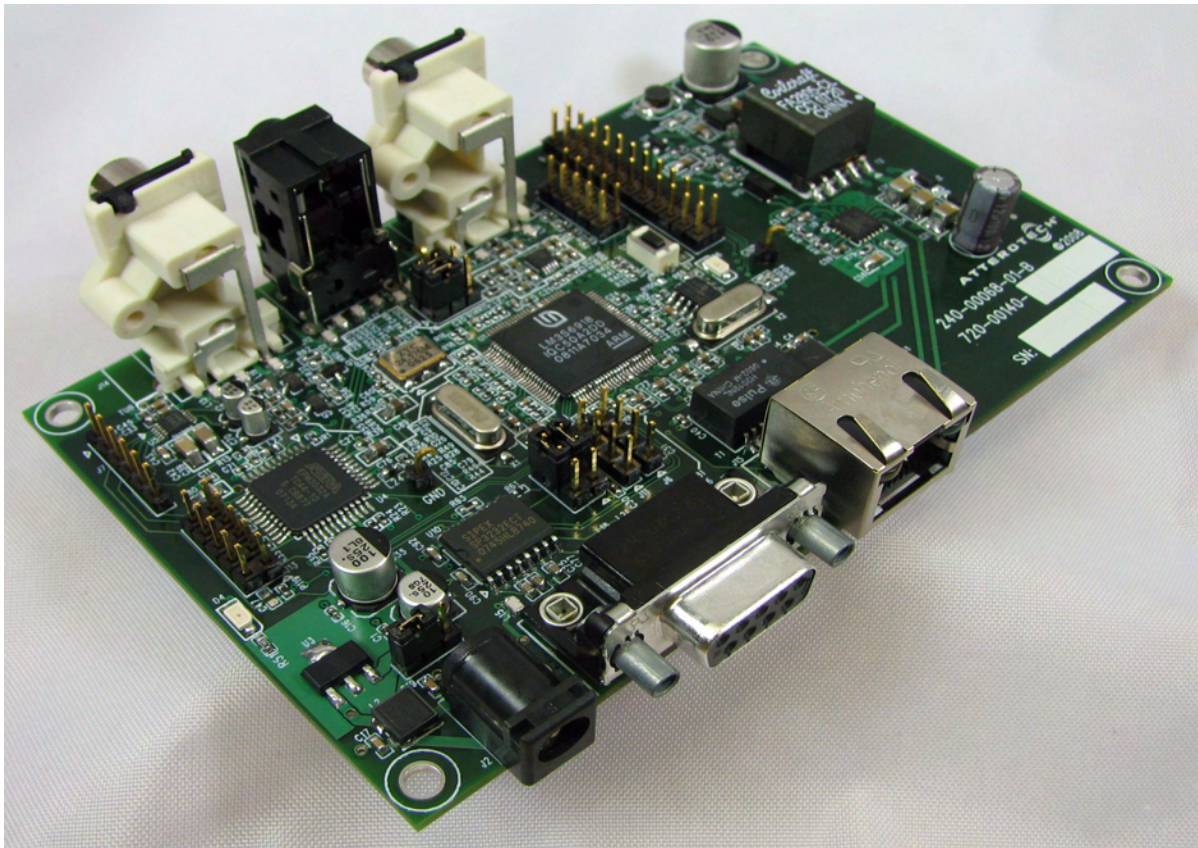
Features

- Unbalanced stereo analog inputs and outputs, on both RCA and 1/8" stereo mini jacks
- I2S digital audio outputs available on a header
- CobraNet Serial Bridge and SHMI functionality is fully supported, with logic levels available for both interfaces and RS-232 level signals available for one (jumperable)
- 8 GPIOs which can be individually set as inputs or outputs, and written/read via the SHMI or via SNMP
- 8 10 bit ADCs which can be read via the SHMI, SNMP, or set to provide periodic updates via UDP packets
- Complete reference design material included for the platform board: schematics, PCB layout, and BOM

CobraNet LE Reference Design Block Diagram



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CobraNet LE Reference Design

Specifications in Brief

- Stereo analog inputs, stereo analog outputs, stereo digital audio outputs
- 8 10-bit A/D converter inputs available on a standard header
- 8 GPIO pins available on a standard header
- RS-232 level converter and DB9F connector for Serial Bridge or SHMI
- Complete IEEE 802.3af compliant PoE power supply on board
- +5V external power supply option on board

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InBox R8 Overview

The InBox R8 CobraNet Audio Input Interface is a cost effective eight input, line level wall box. The R8 features eight unbalanced RCA inputs, which can be used as either eight mono inputs or four stereo inputs. The R8 is designed to fit into a standard dual gang junction box and is PoE enabled, so all connectivity (both power and audio data) to the R8 is provided by a single CAT-5 cable.

Applications

Convenient, wall mounted line level input drops for:

- Hotel ballrooms
- Conference/meeting centers
- Conference rooms
- Sports facilities
- Convention centers
- Health clubs
- Restaurants and Bars

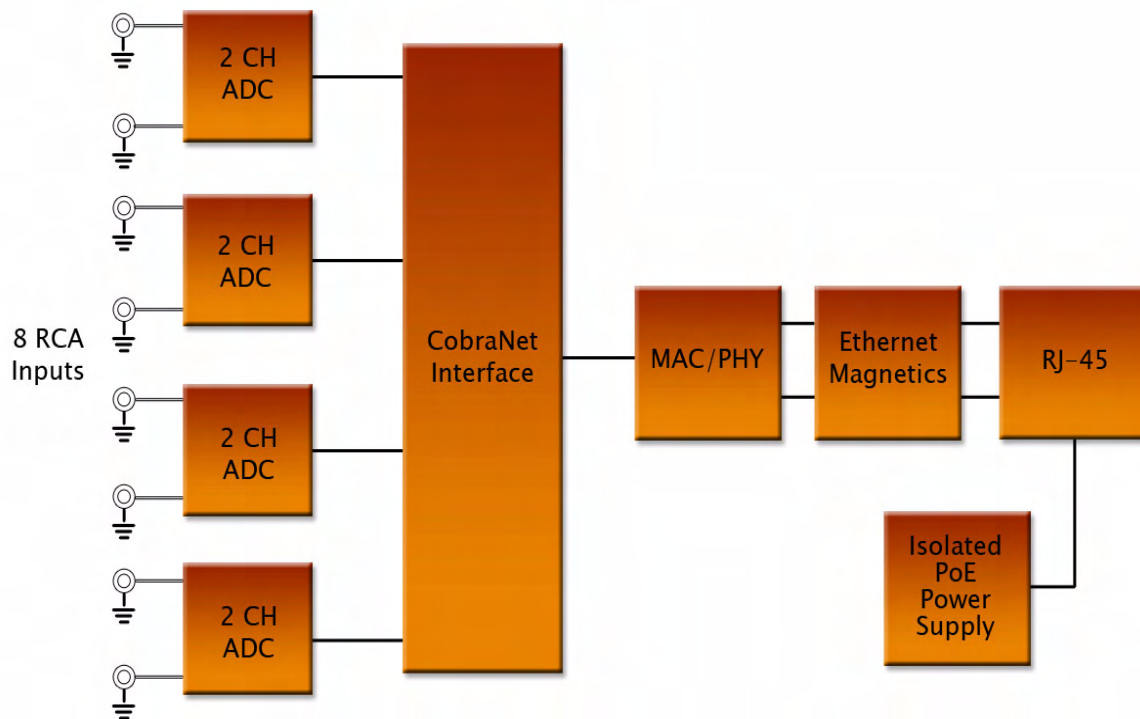
Features

- Eight unbalanced RCA input connectors
- Mounts in a standard dual gang junction box
- RCA inputs may be used in mono mode (8 in) or in stereo mode (4 in)
- PoE powered from a standard PoE network switch
- Enclosure size is 2.75"H x 3.5"W x 1.875"D



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InBox R8 Block Diagram



Specifications in Brief:

Line Input Type:	Unbalanced
Maximum Input Level:	+8dBu without clipping
Input Impedance:	10kΩ
Frequency Response:	20Hz–20kHz, +/-1 dB
System THD:	<0.05%, 1kHz, 3dB below input clipping
Inputs:	8 RCA inputs
Power Consumption:	4W
PoE Class:	Class 2 802.3af PoE PD Compliant
Dimensions:	3.5" W x 2.75" H x 1.875" D

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InBox X2 Overview

The InBox X2 CobraNet Audio Input Interface is a cost effective two input, mic/line level wall box. The X2 features switchable mic/line gain, switchable +12V phantom power, and clipping indicators for each channel. The X2 is designed to fit into a standard dual gang junction box and is PoE enabled, so all connectivity (both power and audio data) to the X2 is provided by a single CAT-5 cable.

Applications

Convenient, wall mounted mic/line input drops for:

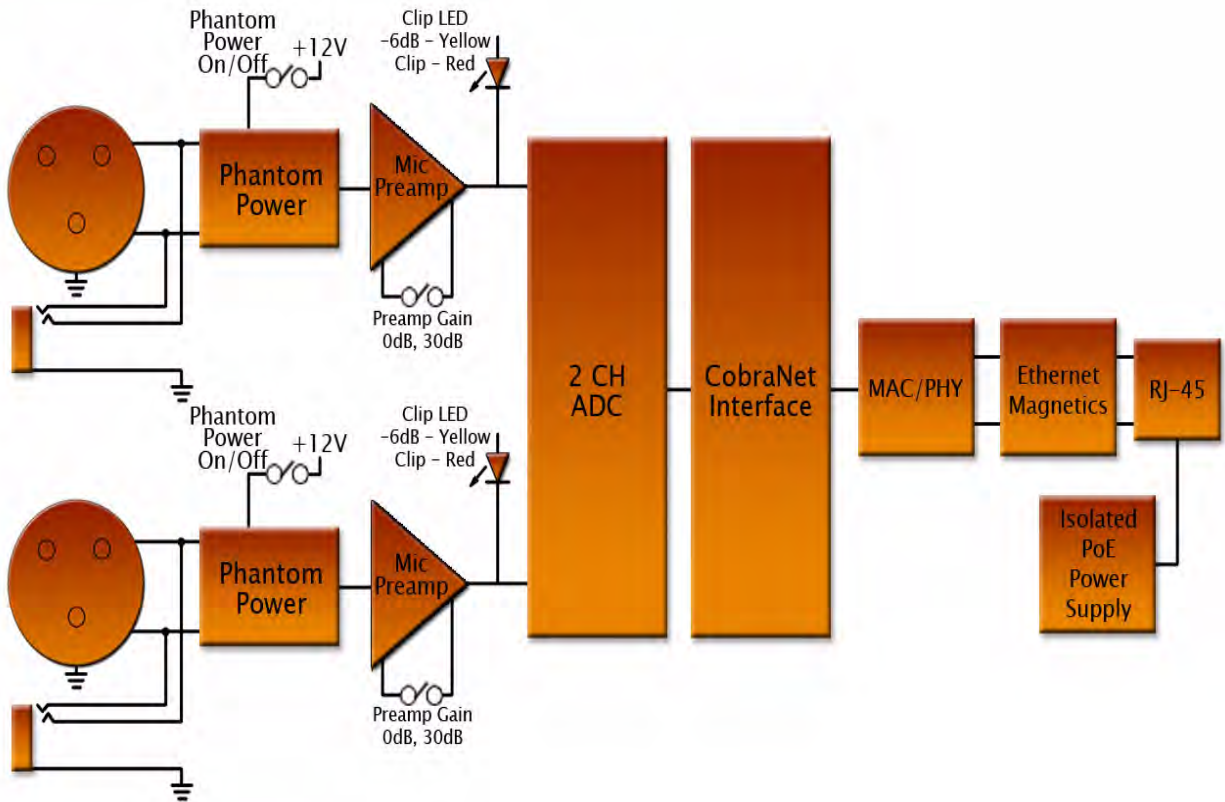
- Hotel ballrooms
- Conference/meeting centers
- Conference rooms
- Sports facilities
- Convention centers

Features

- Two balanced female XLR/TRS combo input connectors
- Mounts in a standard dual gang junction box
- Input gain selection for line (0dB) and mic (+30dB), switchable per channel
- +12V Phantom Power, switchable per channel
- Bicolor (yellow/red) clipping indicators for -6dB below full scale and clipping per channel
- PoE powered from a standard PoE network switch
- Enclosure size is 2.75"H x 3.5"W x 1.875"D



InBox X2 Block Diagram



Specifications in Brief:

Mic/Line Input Type:	Balanced and RF Filtered
Phantom Power:	+12V, switchable
Maximum Input Level:	+8dBu without clipping
Input Impedance:	2kΩ in Mic mode, 120KΩ in Line mode
Mic Gain:	+30dB
EIN (Mic mode):	-109dBu
Freq. Response (Mic gain):	50Hz-20kHz, +/-1dB
Freq. Response (Line gain):	20Hz-20kHz, +/-1dB
System THD:	<0.05%, 1kHz, 3dB below input clipping
Inputs:	2 non-latched female XLR/TRS Combo connectors
Clip LEDs:	Yellow @ -6dB below clipping, Red @ clipping
Power Consumption:	4W
PoE Class:	Class 2 802.3af PoE PD Compliant
Dimensions:	3.5" W x 2.75" H x 1.875" D

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MatchBox USB Overview

Multi-media PCs are becoming more important as media sources, not only in home settings, but in a variety of commercial audio installation settings as well. The MatchBox USB is a cost-effective general purpose solution for direct integration of media PC audio streams into and/or back from a CobraNet-based system. The MatchBox USB appears to the PC as a USB Sound Card and can be configured for 8 channels of audio in various input and output modes.

Applications

- Adding additional inputs or outputs to an existing CobraNet system
- PC driven audio to speaker systems for auditoriums, convention centers, meeting venues, seminars, etc.
- Ability to record audio onto PC to capture meeting notes, seminar audio, etc.

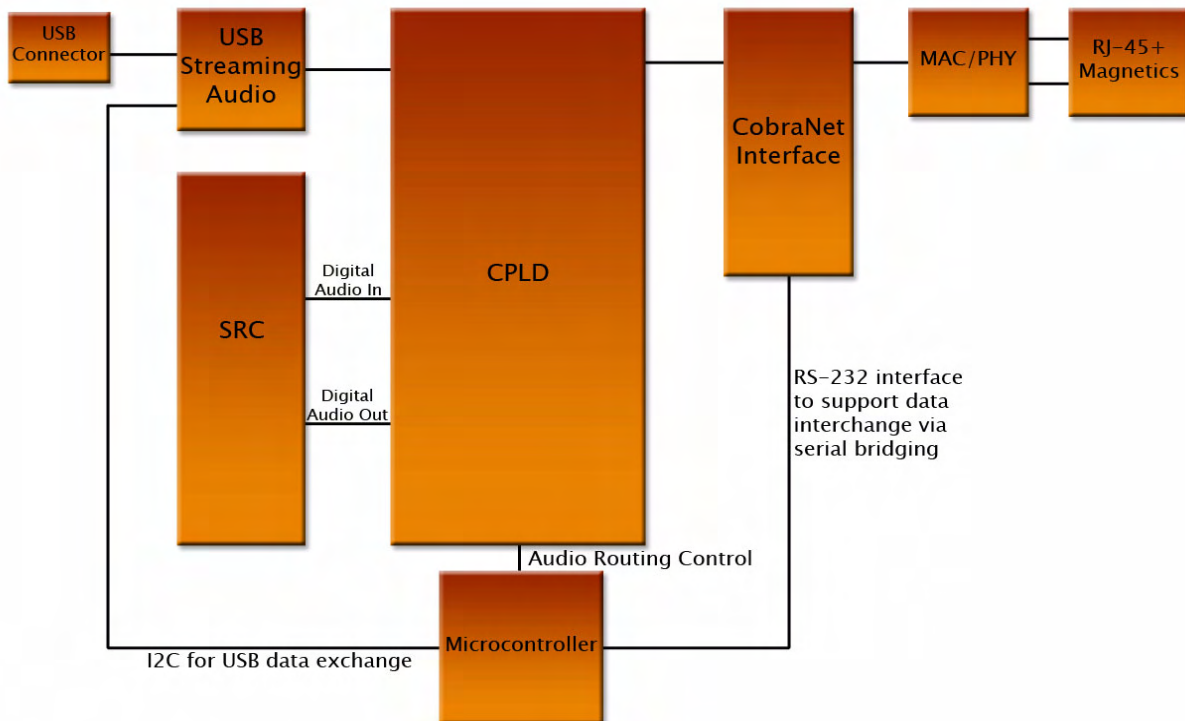
Features

- Full CobraNet connectivity in a half-rack format
- USB Plug-n-Play installation, Full Speed (12.1 Megabits/sec) communication
- Fully compliant with USB Audio 1.0 Standards
- Ability to route:
 - 8 audio channels from the PC onto a CobraNet network in 4 stereo pairs
 - 6 audio channels from the PC onto a CobraNet network in 3 stereo pairs and 2 audio channels from the CobraNet network into the PC in 1 stereo pair
 - 4 audio channels from the PC onto a CobraNet network in 2 stereo pairs and 4 audio channels from the CobraNet network into the PC in 2 stereo pairs
 - 2 audio channels from the PC onto a CobraNet network in 1 stereo pair and 6 audio channels from the CobraNet network into the PC in 3 stereo pairs
- Compatible with most standard PC audio applications (e.g. Media Player, Winamp, Sound Recorder, etc.)
- Enclosure size is 1.5"H x 7.25"W x 6.5"D

MatchBox USB Front and Rear Panels



MatchBox USB Block Diagram



Specifications in Brief:

Connection Types:	USB – Type B, RJ-45
Max # of Output Channels:	8*
Max # of Input Channels:	6*
Power Consumption:	5 Watts maximum @ 9VAC
Dimensions:	1.5" H x 7.25" W x 6.5" D

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*Maximum number of combined input and output channels cannot exceed 8.

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The OutBox R8 CobraNet Audio Output Interface is a cost effective eight output, line level wall box. The R8 features eight unbalanced RCA outputs, which can be used as either eight mono outputs or four stereo outputs. The R8 is designed to fit into a standard dual gang junction box and is PoE enabled, so all connectivity (both power and audio data) to the R8 is provided by a single CAT-5 cable.

Applications

Convenient, wall mounted line level output drops for:

- Hotel ballrooms
- Conference/meeting centers
- Conference rooms
- Sports facilities
- Convention centers
- Health clubs
- Restaurants and Bars

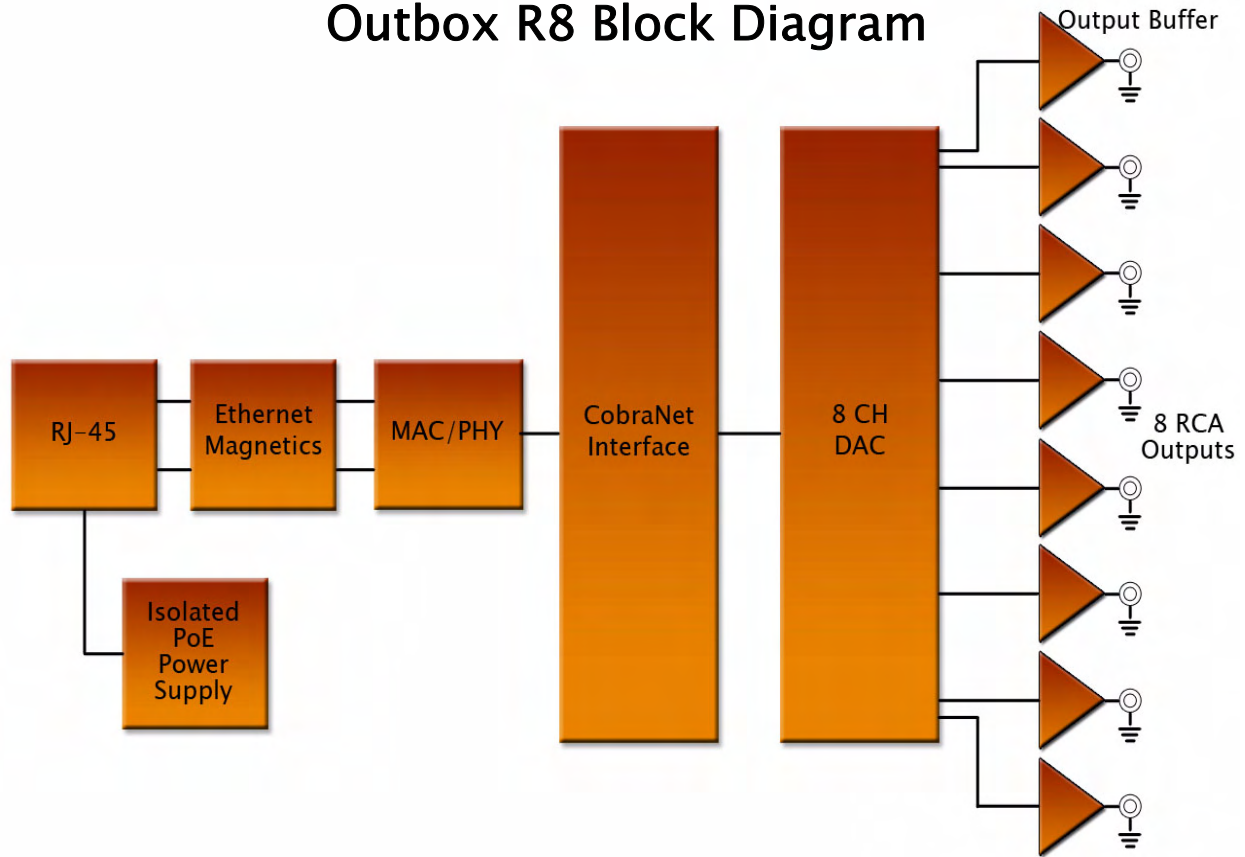
Features

- Eight unbalanced RCA output connectors
- Mounts in a standard dual gang junction box
- RCA outputs may be used in mono mode (8 out) or in stereo mode (4 out)
- PoE powered from a standard PoE network switch
- Enclosure size is 2.75"H x 3.5"W x 1.875"D



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Outbox R8 Block Diagram



Specifications in Brief:

Line Output Type:	Unbalanced
Maximum Output Level:	$\geq +4\text{dBu}$
Output Impedance:	680Ω
Noise:	-83dBu
Frequency Response:	20Hz–20kHz, $\pm 1\text{dB}$ with a $100\text{K}\Omega$ load impedance
System THD:	$< 0.05\%$, 1 kHz, 3dB below input clipping
Power Consumption:	4W
PoE Class:	Class 2 802.3af PoE PD Compliant
Dimensions:	3.5" W x 2.75" H x 1.875" D

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CDK-8 Platform Board Overview

The CDK-8 Platform Reference Design is an ideal way to evaluate the operation and performance of Attero Tech's series of CDK-8 CobraNet® interface modules. The CDK-8 Platform Board accommodates the CDK-8D, CDK-8DHMI, and CDK-8DUART modules. Full reference design material is included to ease hardware integration of the CDK-8 modules.

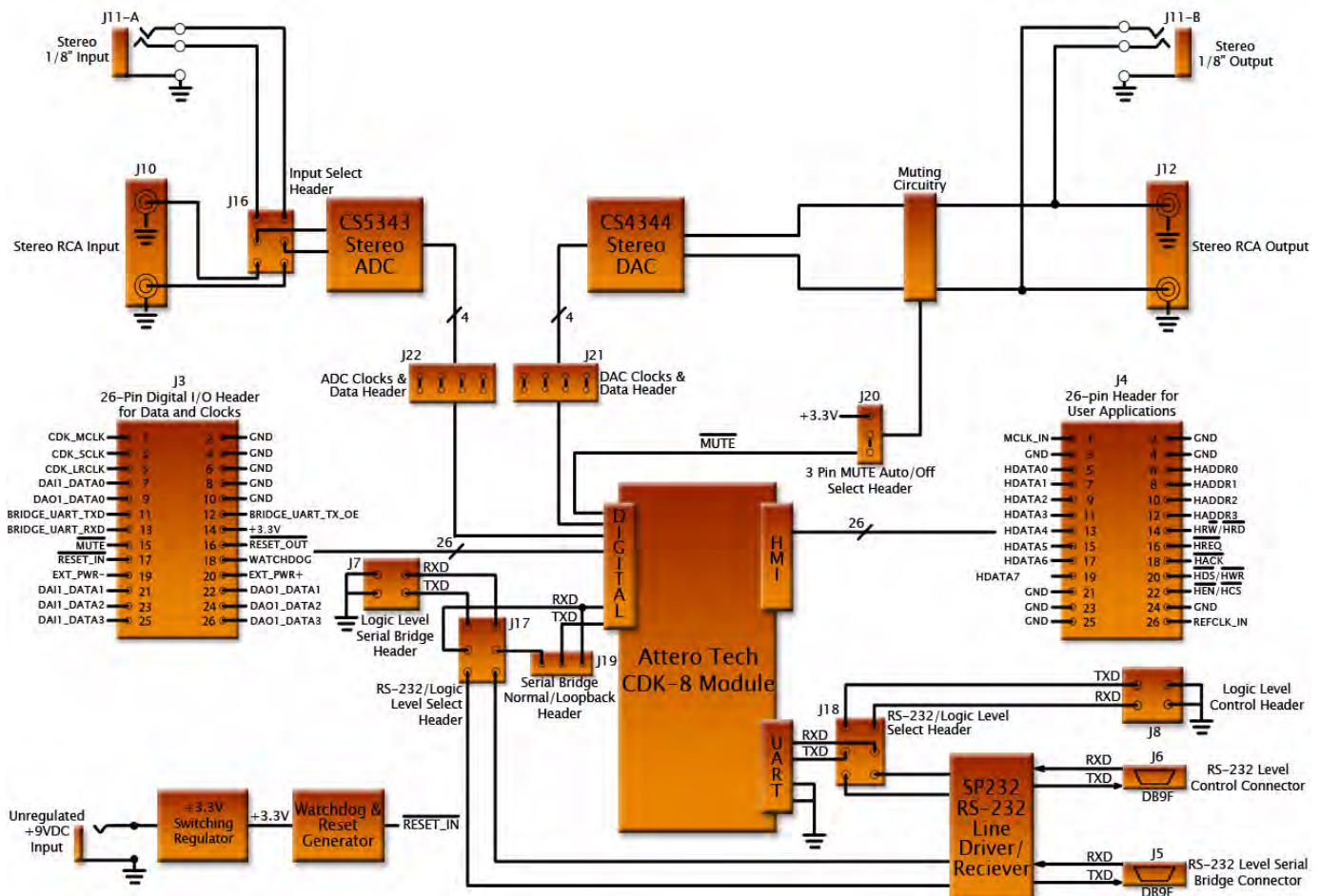
Applications

- Allows complete evaluation of all CDK-8 modules, using both analog and digital audio
- When populated with one of the CDK-8 modules, the CDK-8 Platform Board is a fully functional CobraNet node

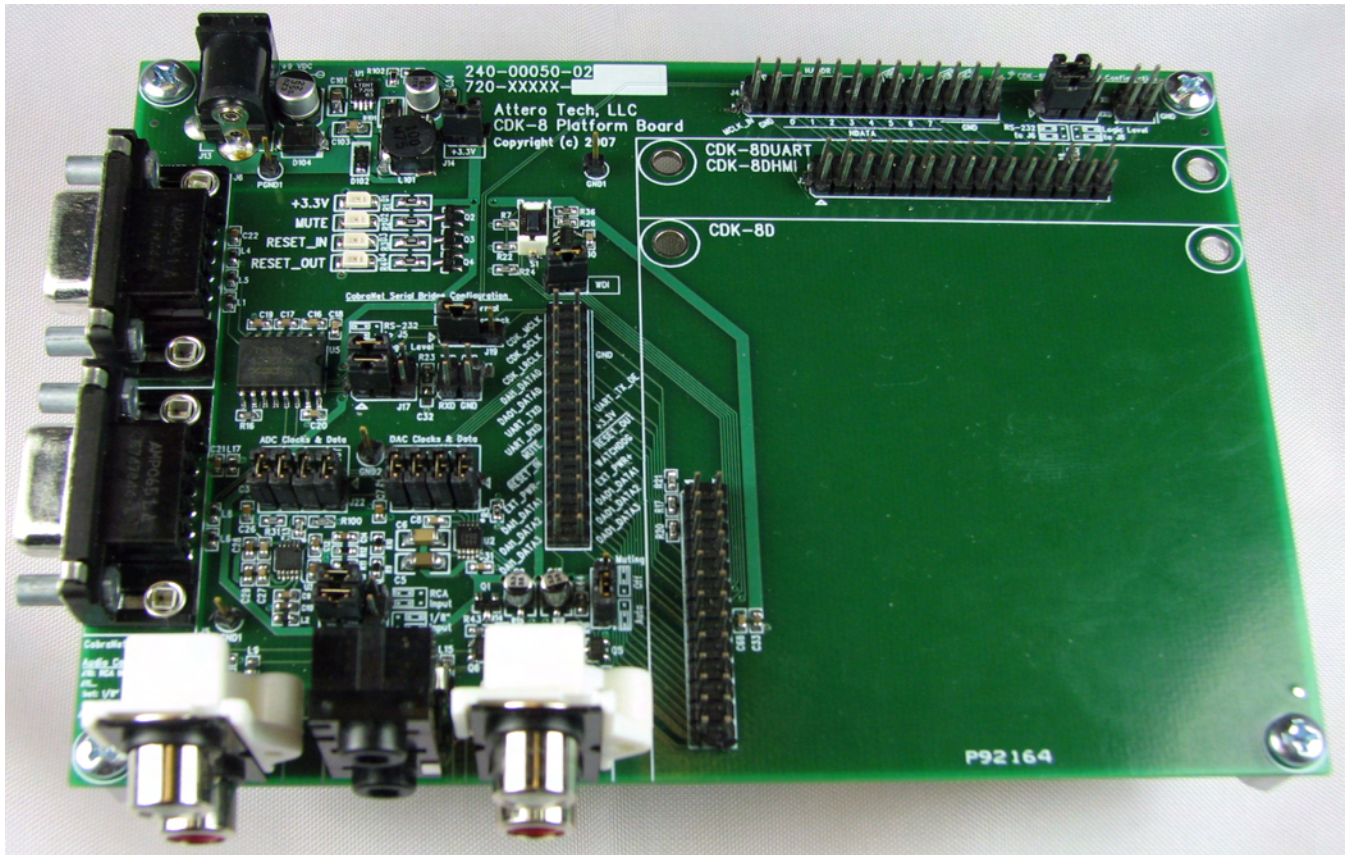
Features

- Support for CDK-8D, CDK-8DHMI, and CDK-8DUART CobraNet interface modules
- Unbalanced stereo analog inputs and outputs, on both RCA and 1/8" stereo mini jacks
- All CDK-8 module header pins are fully replicated on the platform board
- CobraNet Serial Bridge functionality is fully supported, with both logic level and RS-232 level signals available
- Full support for the CDK-8DUART serial control port, with both logic level and RS-232 level signals available
- Complete reference design material included for the platform board: schematics, PCB layout, and BOM

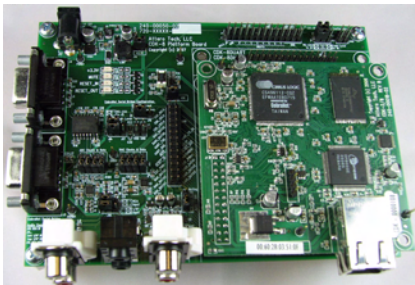
CDK-8 Platform Reference Design Block Diagram



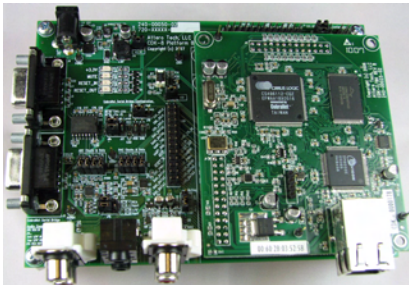
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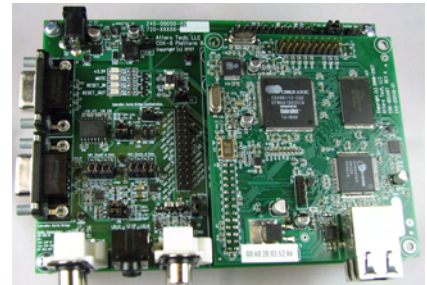
CDK-8 Platform Board



CDK-8D on Platform



CDK-8DHMI on Platform



CDK-8DUART on Platform

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