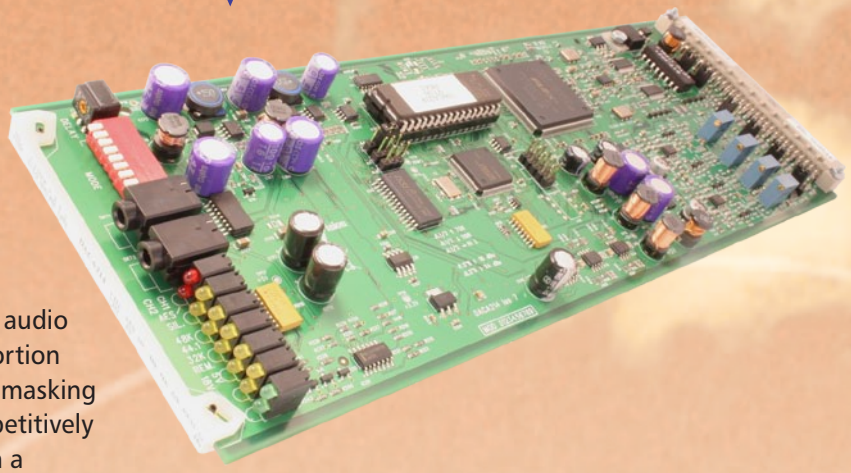
Crystal Vision

DACA214

Dual digital to analogue audio converter



The DACA214 is a dual channel AES/EBU to analogue audio converter. 24 bit processing, excellent noise and distortion figures and Crystal Vision's sophisticated audio error masking together create a truly high quality output. The competitively priced DACA214 offers two independent channels on a 100mm x 266mm module, therefore allowing 24 channels in 2U and making it the perfect audio converter for applications where available rack space is limited.

AES inputs can be 110 ohm balanced, high impedance balanced or 75 ohm unbalanced.

The DACA214 can accept signals with sampling rates anywhere between 30kHz and 50kHz, although a clock rate of 48kHz tends to be the case for most applications. Each input has a clock regenerator for 48kHz signals to ensure low distortion conversion and the highest quality output.

Analogue audio output levels are conveniently preset to give either +18dBu or +24dBu for 0dBFS digital (the most common audio levels within television stations), or can be continuously adjusted from +12dBu to +28dBu.

Other useful features include the option to swap stereo channels 1 and 2 and the ability to invert the phase of the right hand channel to correct phasing errors. The DACA214 can even be converted to single channel operation if multiple outputs from a single stereo input are required. A stereo headphone jack at the front of the board allows you to easily monitor the contents of each stereo pair.

The DACA214 is a 100mm x 266mm module which fits in Crystal Vision's Indigo frames, available in 2U, 1U and desk top box sizes – with up to 12 boards fitting in 2U. It can be used with three different frame rear modules, with each giving two analogue stereo outputs per channel. The RM03 and RM11 are used for 110 ohm AES inputs and the RM12 for 75 ohm.

There is a choice of control and status monitoring options to suit all tastes, including board edge, an integrated control panel on the AE frame, the VisionPanel remote control panel, SNMP, our ASCII and JSON protocols, the Statesman Lite PC Control System or the VisionWeb web browser control. GPI outputs can be set to raise an alarm on loss of AES input or sustained silence. The duration of silence before a warning is given can be programmed from 1.5 seconds to 120 seconds in eight second steps.

- **Dual channel AES digital audio to analogue audio converter**
- **Two 24 bit AES/EBU stereo pairs**
- **Inputs can be 110 ohm balanced, high impedance balanced or 75 ohm unbalanced**
- **Excellent noise and distortion figures**
- **Works with 30kHz to 50kHz sampling rates**
- **Clock regeneration for 48kHz**
- **Adjust the audio levels: +12dBu to +28dBu output level for 0dBFS digital input**
- **Audio error masking**
- **Channel swapping and phase inversion**
- **Space-saving: 100mm x 266mm module allows 12 DACA214 in 2U (six in 1U and two in desk top box)**
- **Flexible control and status monitoring**

SPECIFICATION

MECHANICAL
Standard Crystal Vision module 266mm x 100mm
Weight: 200g
Power consumption: 6.25 Watts

AUDIO INPUTS
Two 24 bit stereo pairs
AES3 110 ohm (balanced) D-Type, or AES3-id (unbalanced) 75 ohm BNC. Set by on-board jumper links to 75 ohm, 110 ohm or high impedance for multiple units on a single feed
Works with any sampling rates between 30kHz and 50kHz, usually 32, 44.1 and 48kHz. Clock regeneration for 48kHz

AUDIO OUTPUTS
Maximum of two analogue stereo outputs per channel using RM03, RM11 and RM12 frame rear modules
Low impedance balanced (66 ohm) output
Can convert to single channel operation if extra outputs from single input required
Level Range: 0dBFS = +28dBu max; 0dBFS = +12dBu min
Factory set default: 0dBFS = +18dBu and +24dBu by on-board link
Signal to noise: Weighted better than -98dB
Total Harmonic Distortion (THD): <.0025% at +18dBu/+24dBu (48kHz crystal mode)
Interchannel crosstalk: <-110dB
Frequency response: +/- 0.1dB 20Hz to 20kHz

DELAY THROUGH BOARD
100ns

GPI INPUT LEVELS
Active pull to ground, pulled up to +5V through 10 kohm

GPI OUTPUT LEVELS
Electrically: Open collector transistors 30V, 270 ohm current limit resistors. Pulled up to +5V through 6800 ohm

GPI INPUTS
Select 48kHz crystal or auto frequency on AES input 1
Select 48kHz crystal or auto frequency on AES input 2
Swap channels 1 and 2
Single stereo (all outputs from AES input 1)

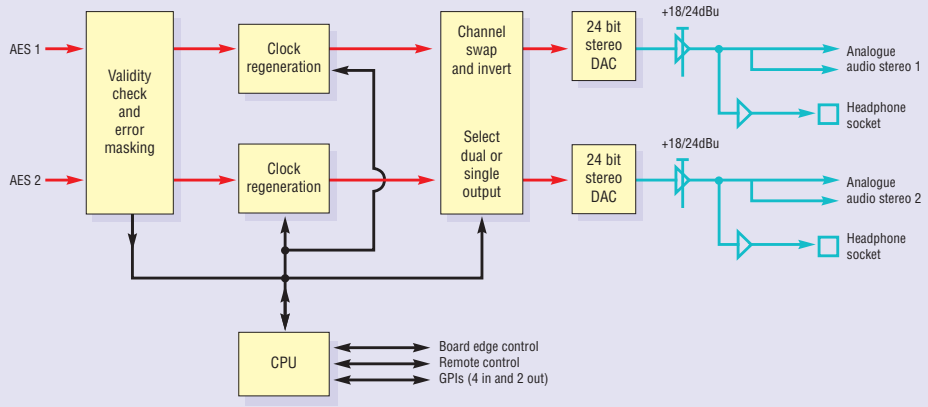
GPI OUTPUTS
AES errors (one per channel)
Error can be set to include sustained silence. Set period of silence before indication from 1.5 to 120 seconds in eight second increments

LED INDICATION OF:
Power supplies on board
AES input present
AES silent
Sample rate
Remote control

LOCAL CONTROL
Options and silence indication delay set by switches at board edge

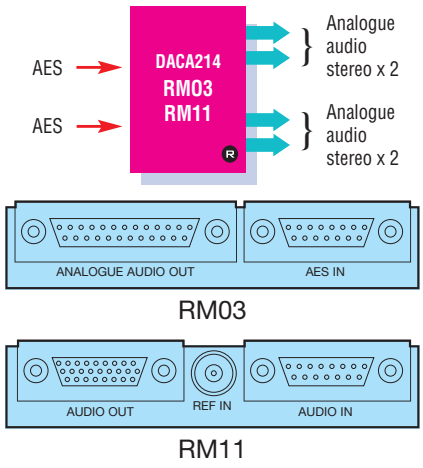
REMOTE CONTROL
Software:
VisionWeb Control is available via the web server on the frame and allows operation using a standard web browser on a computer, tablet or phone
Statesman Lite allows control from any PC on a network
SNMP monitoring and control available as a frame option
Control using ASCII and JSON protocols
Hardware:
Control from integrated control panel on Indigo 1AE-DP frame
Control from VisionPanel 3U remote panel

THE INPUTS AND OUTPUTS

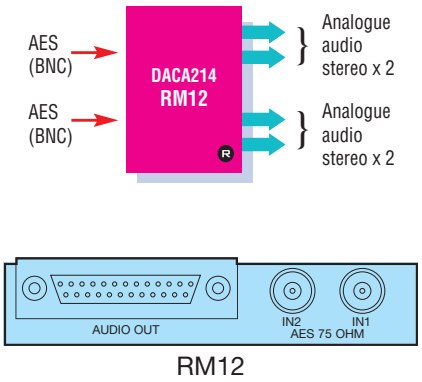


REAR MODULE CONNECTIONS

For 110 ohm AES inputs:



For 75 ohm AES inputs:



ORDERING INFORMATION

DACA214	24 bit dual channel AES to analogue audio converter
Indigo 2SE	2U frame with active front panel featuring smart CPU for up to 12 Crystal Vision modules
Indigo 1AE-DP	1U frame with active front panel featuring smart CPU and integrated control panel for up to six Crystal Vision modules, with included power supply redundancy
Indigo 1SE-DP	1U frame with active front panel featuring smart CPU for up to six Crystal Vision modules, with included power supply redundancy
Indigo DT	Desk top box with passive front panel for up to two Crystal Vision modules
Indigo DTSE	Desk top box with active front panel featuring smart CPU for up to two Crystal Vision modules
RM03	Single slot frame rear module. Allows maximum number of DACA214 in frame (12 in 2U, six in 1U, two in desk top box). Gives access to two 110 ohm AES inputs and two analogue audio outputs per channel
RM11	Single slot frame rear module. Allows maximum number of DACA214 in frame (12 in 2U, six in 1U, two in desk top box). Gives access to two 110 ohm AES inputs and two analogue audio outputs per channel
RM12	Single slot frame rear module. Allows maximum number of DACA214 in frame (12 in 2U, six in 1U, two in desk top box). Gives access to two 75 ohm AES inputs and two analogue audio outputs per channel
VisionPanel	3U Ethernet remote control panel with touch screen
VisionWeb Control	VisionWeb web browser control included within frame software
Statesman Lite	PC Control System
SNMP	SNMP monitoring and control

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