DACA204

Digital to analogue audio converter

USER MANUAL

Crystal Vision

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DACA204 Dual AES/EBU Digital to Analogue Converter USERS MANUAL

INTRODUCTION

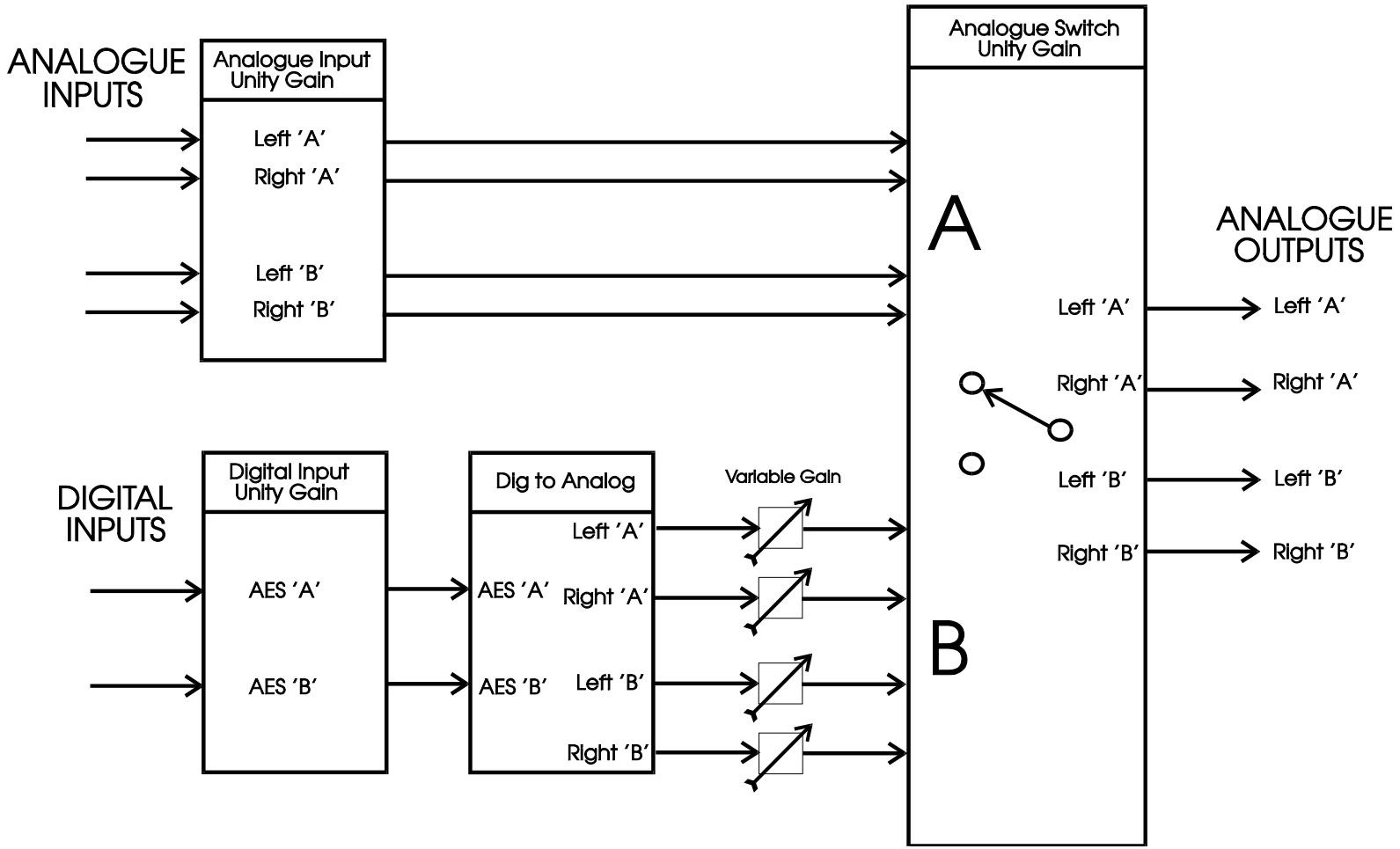
The DACA204 converts 2 digital AES/EBU signals to 4 channels of analogue audio. It includes an analogue input, and the output can be switched between the converted digital input and the analogue input by remote, or pcb mounted switch. The unit can be set to work in either 525 or 625 line standard, and has a system of links for setting the channel status bits in the AES/EBU output. It is very compact with six modules fitting in a 1U frame, or 12 in a 2U frame. The FR1-4-2A frame allows a mixture of 2 of the Crystal Vision Audio AtoD or DtoA converters, and 4 of the video converters all in a single 1U frame.

The unit plugs into the front of the rack frame. The hinged front panel of the frame reveals LED indication of status. Configuration is possible using movable links.

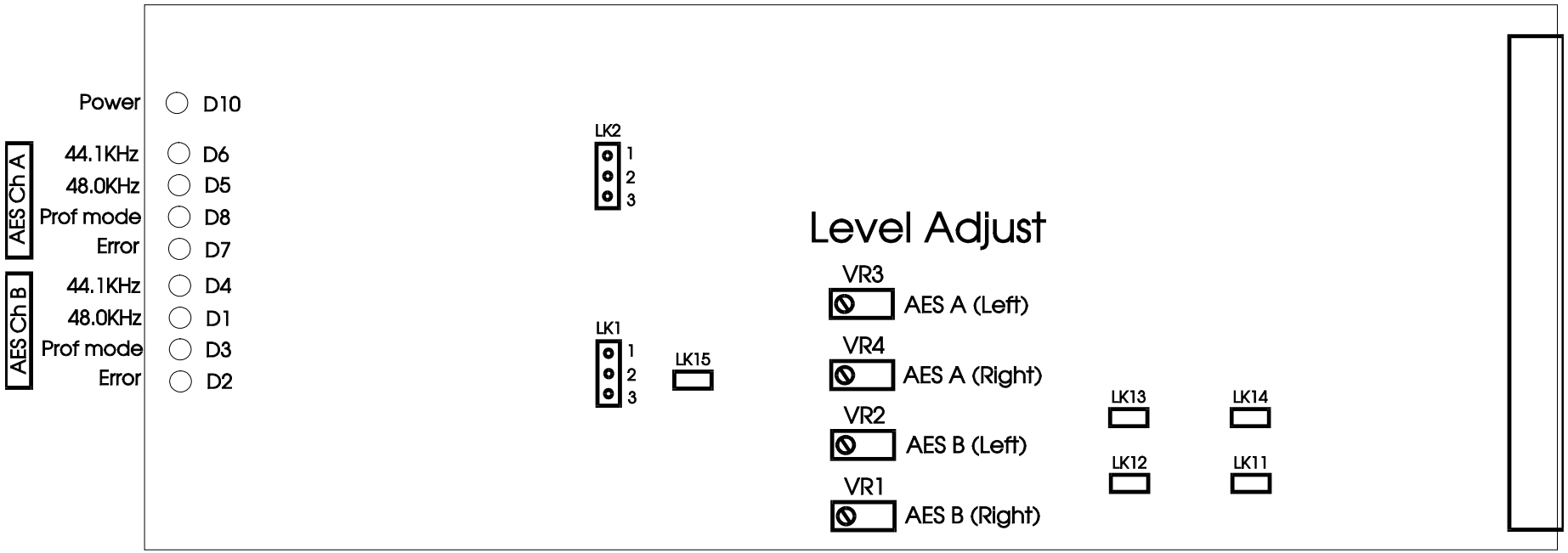
SPECIFICATION

Inputs:	2 AES/EBU Inputs 110 ohm
	4 Analogue Audio Inputs Electronically Balanced, High impedance
	1 TTL/GPI (also pcb switch) to switch input between digital to analogue conversion and unity gain analogue active bypass
from	the above 4 analogue inputs.
Outputs	4 Balanced Analogue Audio
System Gain	Pot adjustment for AES level -18dB to -24dB to give 0dB analogue output
LED Indication	Sampling Frequency 44.1KHz or 48khz for each channel
	Input error for each channel with error code.
Provisional Performance	
Noise	<-100dB wrt 0dB AES/EBU input CCIR weighted
THD	<.01% at 0dB analogue output
Output Range	Max +/- 8v output swing with THD <0.05%
Input sampling freq	From 32khz to 48khz. Automatic locking with no reference required. 2 AES channels are independent and may be
different	sampling frequencies.

Crystal Vision Digital to Analogue Converter Block Diagram



Crystal Vision Dual Audio D to A converter Issue 2



LK15 should be linked (Connects analogue to digital grounds)

LK1 and LK2 should be linked 1-2

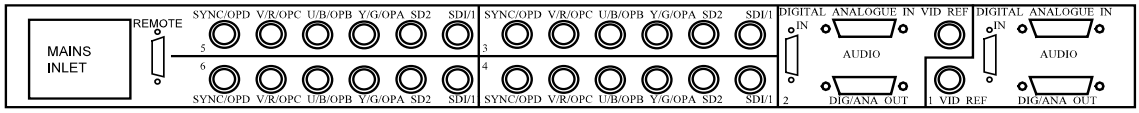
Link Positions

Link	Explanation
11	These Links must all be jumpered
12	when U27 and U28 are not fitted
13	This will totally disable the analogue
14	input option.

DO NOT FIT IF U27 AND U28 ARE FITTED!!

INSTALLATION INFORMATION

The DACA204 plugs into the front of a suitable Crystal Vision frame. The FR1-4A2 is a 1U frame which takes 2 audio as well as 4 video modules. The modules can be plugged into and removed from the frame while it is powered without damage.



The Connections to an audio module are as shown below. The pin-outs are shown in the following tables, as well as the lead wiring required to connect to standard XLR connectors. Audio position 1 relates to the top left board position looking from the front of the frame. Audio position 2 is the lower left board position.

Digital In	9 way D
Analogue In	15 way D (Input to switch)
Digital/Analogue Out	15 way D (Analogue Out on D to A)
Video Ref	BNC (Not used on D to A)

N.B. Max size for D type hoods is 32 x 15mm for 9 way, and 40 x 15 mm for 15 way. For example RS stock numbers 460-985 and 454-930.

Connections For AES/EBU D to A Converter

9 Way D-Type Socket (Digital Input/REF)
Digital Input

Signal Name	DIN 41612 Pin No.	10 Way IDC Skt pin No. (internal)	9 way D Pin No.
AESA +	B9	1	1
AESA -	A9	2	6
GND	B10	3	2
GND	A10	4	7
GND	B11	5	3
GND	A11	6	8
AESB +	B12	7	4
AESB -	A12	8	9
GND	B13	9	5
GND	A13	10	-----

15 Way D-Type Socket (Analogue Input)

Signal Name	DIN 41612 Pin No.	34 Way IDC Skt pin No. (internal)	15 Way D Pin No.
AA +	B16	1	1
AA -	A16	2	9
GA	B17	3	2
GA	A17	4	10
AB +	B18	5	3
AB -	A18	6	11
GB	B19	7	4
GB	A19	8	12
AC+	B20	9	5
AC-	A20	10	13
GC	B21	11	6
GC	A21	12	14
AD +	B22	13	7
AD -	A22	14	15
GD	B23	15	8
GD	A23	16	---

15 Way D-Type Socket (Analogue Output)

Signal Name	DIN 41612 Pin No.	34 Way IDC Skt pin No. (internal)	15 Way D Pin No.
OA +	B24	17	1
OA -	A24	18	9
GND	B25	19	2
GND	A25	20	10
OB +	B26	21	3
OB -	A26	22	11
GND	B27	23	4
GND	A27	24	12
OC +	B28	25	5
OC -	A28	26	13
GND	B29	27	6
GND	A29	28	14
OC +	B30	29	7
OC -	A30	30	15
GND	B31	31	8
GND	A31	32	---
GND	B32	33	---
GND	A32	34	---

Board Edge Connector Wiring

5V	A3
0V	A4
-5V	A5

10 way IDC socket	A/B9 to A/B13
34 way IDC socket	A/B16 to A/B32

Sync input (signal)	B7	(on 2 way BERG connector)
Sync Input (Ground)	A7	(not used on DAC)

Remote Signal (SWA B1)	B6
Remote Signal (SWA B2)	A6

XLR Breakout Leads

Digital Input/REF (Digital Input)

XLR Female AES CH1/2	9 way D Male	
1	2	Gnd
2	1	+
3	6	-
XLR Female AES CH3/4		
1	5	Gnd
2	4	+
3	9	-

Analogue Input

XLR Female Audio Channel 1	15 way D Male	
1	2	Gnd
2	1	+
3	9	-
XLR Female Audio Channel 2		
1	4	Gnd
2	3	+
3	11	-
XLR Female Audio Channel 3		

1	6	Gnd
2	5	+
3	13	-
XLR Female Audio Channel 4		
1	8	Gnd
2	7	+
3	15	-

Analogue Output

XLR Male CH1	15 way D Male	
1	2	GND
2	1	+
3	9	-
XLR Male CH2		
1	4	GND
2	3	+
3	11	-
XLR Male CH3		
1	6	GND
2	5	+
3	13	-
XLR Male CH4		
1	8	GND
2	7	+
3	15	-