

# Crystal Vision

## ANALOGUE VIDEO DISTRIBUTION AMPLIFIERS

Crystal Vision's broadcast quality analogue video distribution amplifiers allow an extensive range of installation options using a combination of four boards and seven rear modules to get just the configuration you need. Providing multiple outputs of an analogue source, they are ideal for the distribution of programme feeds, black and burst and mixed syncs. Performance is specified up to 30MHz for use in HD installations.

Each board offers high quality equalisation to correct any distortion to the analogue signal caused by up to 300m of cable length, as well as gain adjustments of +/-3dB. The remote control versions are often selected because they include a clamp, which will compensate for differences in ground voltage by removing hum already on the signal. Differential inputs are available when the boards are used with suitable rear modules, while passive loop-throughs are independent of the DA meaning you can remove the board without losing the looped-through source.

Troubleshooting is easy: all modules have GPI and LED indication of errors, including input failure and loss of power.

### SINGLE CHANNEL

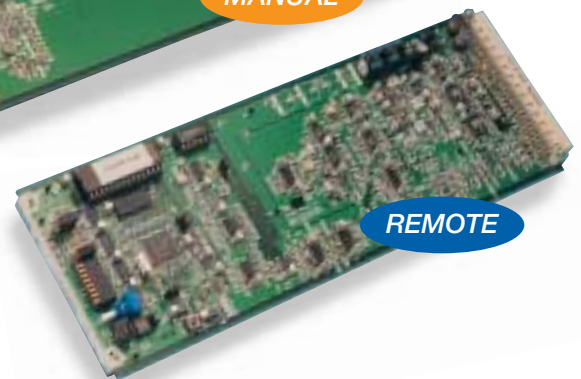
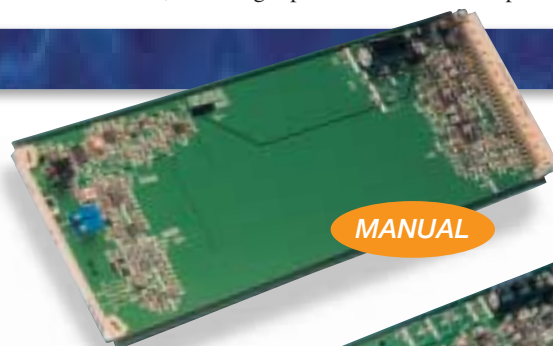
#### VDA110M

The most popular of the VDAs, the single channel VDA110M gives a maximum of eleven outputs or ten outputs with a loop-through, depending on the frame rear module fitted. It offers board edge adjustment of gain and equalisation and can be used with six different rear modules. Particularly suitable for distributing video and black and burst where remote monitoring is not required.

#### VDA110R

The single channel VDA110R gives a maximum of eleven outputs or ten outputs with a loop-through. Gain, equalisation and clamp are all remotely adjustable by active frame front panel, remote panel or the Statesman PC Control System. It also offers sophisticated error reporting, including dark and white-clip video and can be used with six different rear modules.

Rear module	Input	Outputs	Loop-through?
RM01	Non-differential	5	No
RM02	Differential	8	No
RM09	Differential	4	Yes
RM10	Differential	7	Yes
RM16	Differential	10	Yes
RM18	Non-differential	11	No



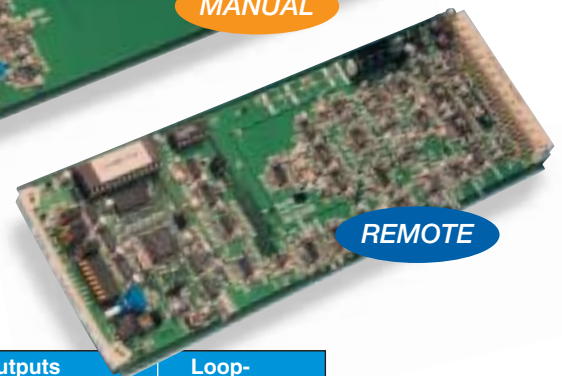
### DUAL CHANNEL

#### VDA210M

The dual channel VDA210M gives a maximum of five outputs or four outputs with a loop-through per channel. It has board edge adjustment of gain and equalisation and, being dual, reduces the cost for multi-channel applications where fewer outputs are required. Can be used with four different rear modules.

#### VDA210R

The dual channel VDA210R gives up to five outputs or four outputs with a loop-through per channel. It has remotely adjustable gain, equalisation and clamp using the frame front panel, remote panel or Statesman PC software and gives sophisticated error reporting, including dark and white-clip video. It is the reduced cost solution for multi-channel applications where fewer outputs and remote control are needed. Can be used with four different rear modules.



Rear module	Input 1	Input 2	Outputs of first channel	Outputs of second channel	Loop-throughs?
RM01	Non-differential	Non-differential	2	2	No
RM02	Differential	Non-differential	3	4	No
RM15	Differential	Differential	4	4	Yes
RM18	Non-differential	Non-differential	5	5	No

# SPECIFICATION

## MECHANICAL

Standard Crystal Vision modules 266mm x 100mm  
 Weight: 200g  
 Power consumption: 2 Watts (VDA110M and VDA210M); 4 Watts (VDA110R); 6 Watts (VDA210R)

## ANALOGUE INPUTS

Analogue video 1 volt with syncs. Composite PAL or NTSC. Component video up to 30MHz bandwidth  
 Black and burst, or 2 volts syncs  
 Loop-through available with RM09, RM10, RM15 and RM16 frame rear modules, or 75ohm termination. Loop-through does not need VDA to be fitted - rear module has all circuitry required  
 Differential input with RM02 (first channel only), RM09, RM10, RM15 and RM16 rear modules

## ANALOGUE OUTPUTS

Maximum signal: +/-2 volts  
 Single VDAs: Maximum of eleven outputs using the RM18 rear module (four outputs with RM09, five with RM01, eight with RM02 and ten with RM16)  
 Dual VDAs: Maximum of five outputs per channel using the RM18 rear module (two outputs per channel with RM01, three of the first and four of the second with RM02 and four per channel with RM15)

## PERFORMANCE

Input Return Loss: >48dB to 10MHz  
 Output Return Loss: >48dB to 10MHz  
 Frequency Response: +/-0.5dB to 5.5MHz, +/-0.2dB to 10MHz, +/-1.5dB to 30MHz  
 Differential Gain: <0.2% at 5MHz  
 Differential Phase: <0.2° at 5MHz  
 Signal to Noise Ratio at 0 to 10MHz: <65dB  
 Cable equalisation: Belden 8281 or BBC PSF1/2 manual adjustment up to 300m  
 Gain adjustment: +/-3dB manual adjustment

## LOCAL CONTROL

Cable equalisation 0-300m  
 Gain +/-3dB  
 Video clamp (three settings) (VDA110R/210R only)

## REMOTE CONTROL (VDA110R/210R ONLY)

RS422/485  
 19200 baud, 8 bits, 1 stop no parity  
 Control from frame active front panel or remote panel  
 Statesman allows control from any PC on a network

## GPI OUTPUT LEVELS

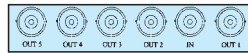
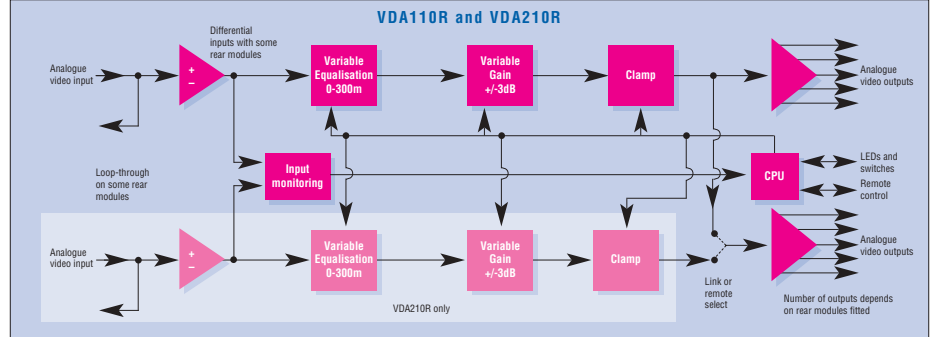
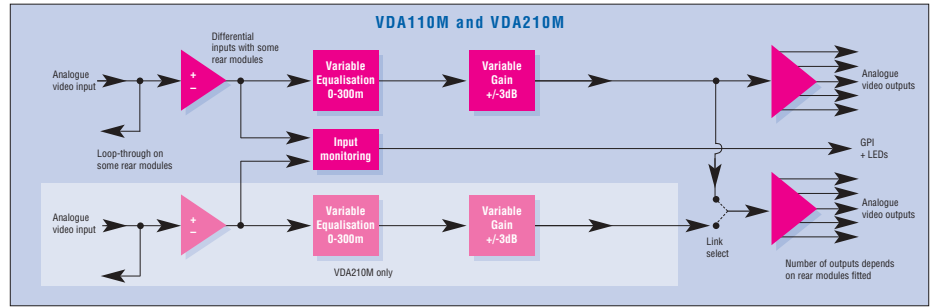
Lamp driver outputs, active low  
 Links can be replaced with resistors to drive LEDs if requested when ordered  
 Max current: -500Ma

## GPI OUTPUTS

VDA110M: One (input detect)  
 VDA110R: Three (input detect, dark video and white-clip video)  
 VDA210M: Two (two sets of input detect)  
 VDA210R: Six (two sets of input detect, dark video and white-clip video)

## LED INDICATION OF:

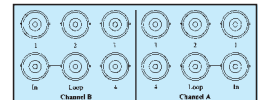
Input detect  
 PSU OK  
 625 line input (VDA110R/210R only)  
 Dark video (VDA110R/210R only)  
 White-clip video (VDA110R/210R only)



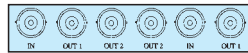
RM01 used with VDA110M/VDA110R



RM09



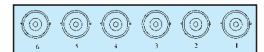
RM15



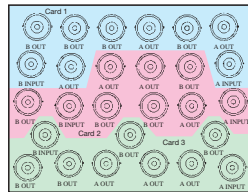
RM01 used with VDA210M/VDA210R



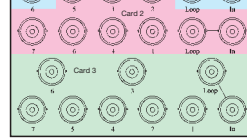
RM10



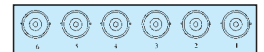
RM16



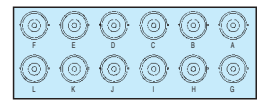
RM02



RM15



RM16



RM18

# ORDERING INFORMATION

- VDA110M Single analogue video distribution amplifier with manual control
- VDA110R Single analogue video distribution amplifier with remote control
- VDA210M Dual analogue video distribution amplifier with manual control
- VDA210R Dual analogue video distribution amplifier with remote control
- Indigo 4 4U frame with passive front panel for up to 24 Crystal Vision modules
- Indigo 4S 4U frame with passive front panel fitted with Statesman CPU for up to 24 Crystal Vision modules
- Indigo 2 2U frame with passive front panel for up to 12 Crystal Vision modules
- Indigo 2A 2U frame with active front panel for up to 12 Crystal Vision modules
- Indigo 2S 2U frame with passive front panel fitted with Statesman CPU for up to 12 Crystal Vision modules
- Indigo 1 1U frame with passive front panel for up to six Crystal Vision modules
- Indigo 1A 1U frame with active front panel for up to six Crystal Vision modules
- Indigo 1S 1U frame with passive front panel fitted with Statesman CPU for up to six Crystal Vision modules
- Indigo DT Desk top box with passive front panel for up to two Crystal Vision modules
- Indigo DTA Desk top box with active front panel for up to two Crystal Vision modules
- Indigo DTS Desk top box with passive front panel fitted with Statesman CPU for up to two Crystal Vision modules
- RM01 Single slot frame rear module. Allows maximum number of VDAs in frame (24 in 4U, 12 in 2U, six in 1U, two in desk top box). Gives access to five outputs on single VDAs and two outputs per channel on dual VDAs
- RM02 Four slot frame rear module. One rear module used for three VDAs, allowing 18 VDAs in 4U and nine VDAs in 2U. Gives access to eight outputs on single VDAs and three outputs of the first channel and four of the second channel on dual VDAs
- RM09 Single slot frame rear module. Allows maximum number of VDAs in frame (24 in 4U, 12 in 2U, six in 1U, two in desk top box). Gives access to four outputs and a rear module loop-through on single VDAs
- RM10 Four slot frame rear module. One rear module used for three VDAs, allowing 18 VDAs in 4U and nine VDAs in 2U. Gives access to seven outputs and a rear module loop-through on single VDAs
- RM15 Two slot frame rear module. Allows 12 VDAs in 4U, six in 2U, three in 1U and one in desk top box. Gives access to four outputs and a rear module loop-through per channel on dual VDAs
- RM16 Two slot frame rear module. Allows 12 VDAs in 4U, six in 2U, three in 1U and one in desk top box. Gives access to ten outputs and a rear module loop-through on single VDAs
- RM18 Two slot frame rear module. Allows 12 VDAs in 4U, six in 2U, three in 1U and one in desk top box. Gives access to eleven outputs on single VDAs and five outputs per channel on dual VDAs
- REMIND 19" remote control panel
- Statesman PC Control System

**Crystal Vision Ltd.**

Lion Technology Park,  
 Station Road East, Whittlesford,  
 Cambridge CB2 4NL, England.  
 Tel: +44 (0)1223 497049  
 Fax: +44 (0)1223 497059  
 E-mail: sales@crystalvision.tv  
 www.crystalvision.tv