VDA110R

Analogue video distribution amplifier

USER MANUAL

Crystal Vision

Crystal Vision Ltd., Lion Technology Park, Station Road East, Whittlesford, Cambridge, CB22 4WL, England.
E-mail: sales@crystalvision.tv Website: www.crystalvision.tv Tel: +44(0) 1223 497049 Fax: +44(0) 1223 497059

Contents

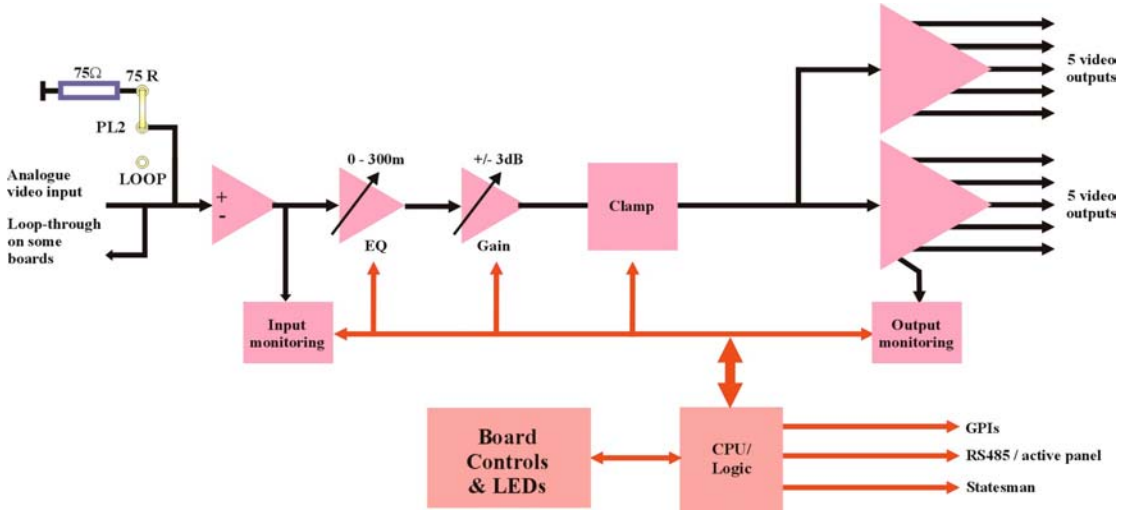
1 Introduction

The VDA110R is a single analogue video DA with up to eleven main outputs. A loop through output may be available depending on the rear module fitted.

It has adjustable gain, equalisation and clamp and gives sophisticated error reporting, including dark and white clip video. Input termination is link selectable.

The VDA110R may be used with the RM01 and RM09 single-slot rear connectors for up to 12 modules in a 2U frame, the RM02 and RM10 quadruple-slot rear connectors for up to 9 modules in a 2U frame and the RM6 and RM18 double-slot rear connectors for up to 6 modules in a 2U frame. The eleventh output is only available with the RM18.

The unit plugs into the front of the rack frame, and the universal connection system allows a mixture of Crystal Vision modules in the frame. The hinged front panel of the case reveals LED indication of input status, output status and controls for cable equalisation, gain and output clamping.



VDA110R video distribution amplifier

The VDA110R has LED and GPI indication of dark and clip input failure and input standard for each channel. General-Purpose Interface lines are also provided to indicate dark, clip and input presence.

The main features are as follows:

- Single 1 in 11-out video distribution amplifier
- Continuously-variable equalisation for up to 300 metres of coaxial cable.
- GPI dark, clip and input presence indication
- Card edge, active/remote panel and Statesman control options

Note: This manual covers the single channel VDA110R. The dual channel VDA210R and the VDA210M/110M without remote control are also available.

2 Installing Statesman

The Crystal Vision Statesman PC control software is designed to control a range of Crystal Vision modules via serial control from a PC. Statesman provides a user friendly means of configuring and operating modules with the benefit of see-at-a-glance status monitoring. Most functions can be accessed from Statesman menus.

The main Statesman application communicates with each module in a frame through an active or passive control panel. A passive panel cannot be used for Statesman control.

Minimum pre-requisites:

- A PC running either Windows 2000 or Windows XP is recommended
- A parallel port dongle for Statesman PCs with attached Crystal Vision frames
- An RS422 serial connection from the host PC to the Control/422 RJ45 or Remote/RMT 2 connector on Crystal Vision frames
- An active or Statesman enabled control panel MUST be fitted to the frame with version 1.63 or above firmware – if it is an Indigo frame the firmware must be V1.04 or above
- An optional RS422 to RS232 converter if the PC has no RS422 ports

Installing Statesman

- Refer to the readme and/or help file on the CD before proceeding
- To view all application windows, set graphics resolution to at least 1024 x 768
- Remove any previous version of the Statesman software using the Add/Remove Programs application in the Windows Control Panel
- Ensure that the Statesman dongle is fitted to the parallel port of the host PC
- Insert the Statesman CD and the installation should start immediately – if it does not, run the setup.exe file on the CD
- Obey any installation program prompts and restart the PC when prompted

Running Statesman for the first time

The Statesman PC Control System may be run from the Crystal Vision programs folder via the Start menu or by double-clicking on the Crystal Vision.exe file in the installed program directory.

When the program runs it will require licence information and an administrator name and password. It will also need to know which computer port is being used to connect to a Crystal Vision frame(s).

Note: For further details of Statesman configuration please refer to the Statesman manual.

3 Statesman operation

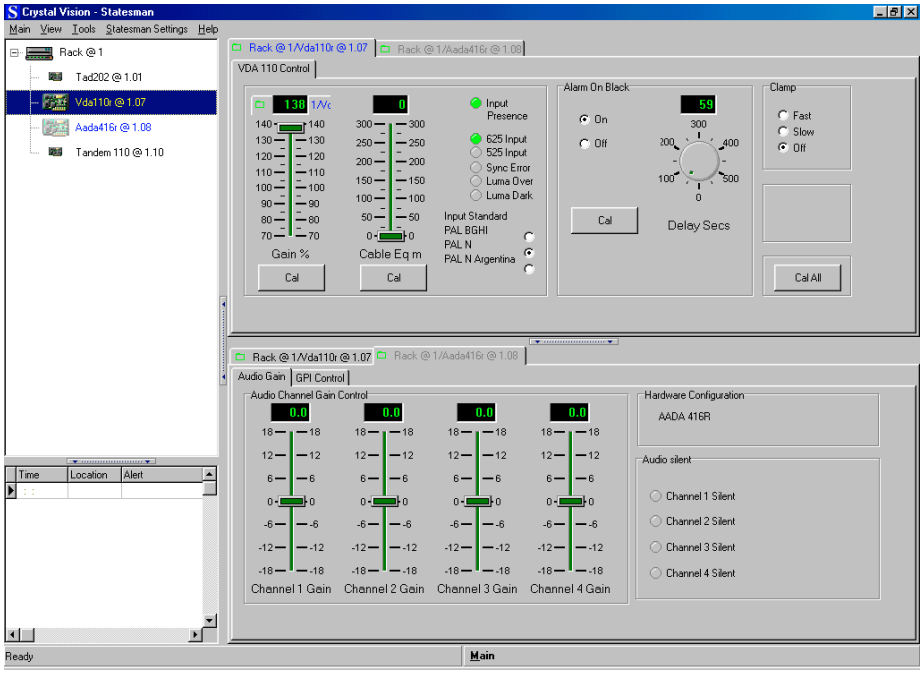
Once Statesman is configured it should automatically detect any statesman compatible modules in the connected frame or frames and display them in the left hand explorer-style window of the main application.

Open any frame by clicking on the '+' sign or by double clicking on a frame. Installed modules should be shown with module icons. Frame and module icons can be named as desired by right-clicking or using the edit menu and choosing rename.

To aid user recognition of module and frame status quickly, the following colour and size coding is used:

- A module is shown present by full colour and absent by greyed colour
- A module is shown open by large icon size and closed by small icon
- A module is the source of an active alarm if red and not alarmed if green

Double-clicking on a module will enable the display of the main application menus.



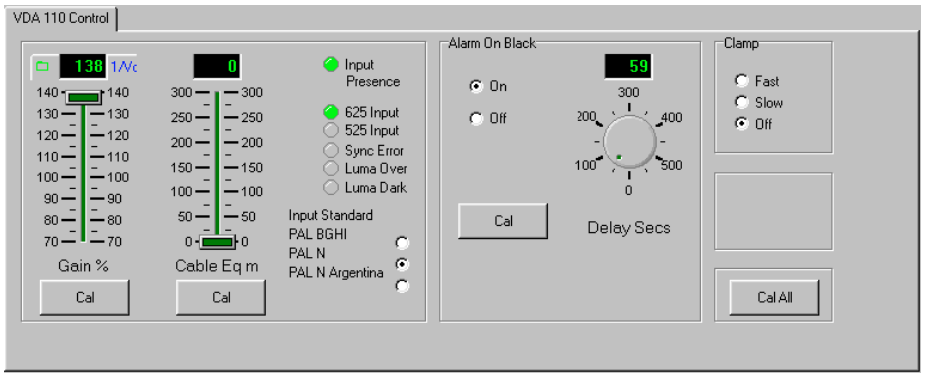
Statesman main application window

The two large control panes shown in the upper and lower halves of the window may display different menus for the same card, or controls for different cards. Click on the horizontal button-bar between the two panes to close the lower plane or drag the button to vary the size of the panes.

3.1 Video status and settings

The VDA 110 Control tab provides access to the following

- Variable gain
- Variable equalisation
- Input status/error status/standard
- Black picture detect delay
- DC restoration settings
- Restore factory settings



VDA110R Control tab

Gain

Video gain may be varied in gain in 0.025dB steps from 70% (–3.0dB) to 140% (+3.0dB) using the slider provided. Press the CAL button to restore unity gain.

Equalisation

Cable loss compensation may be varied in 1.2m (4 feet) steps from zero to 300m (0 to 984 feet).

Press the CAL button to restore the default of zero equalisation.

Status indicators

Ind	colour	Action
Inp Presence	Green	Composite / Y + sync / Green + sync input signal present.
Sync Error	Yellow	Input sync size <90% or >110% of expected value.
Luma Over	Yellow	Output luma levels >110% of peak white
Luma Dark	Yellow	Output luma level <15% of peak white for time delay set by rotary Delay control
525	Green	525-line signal input
625	Green	625-line signal input

Input standard select

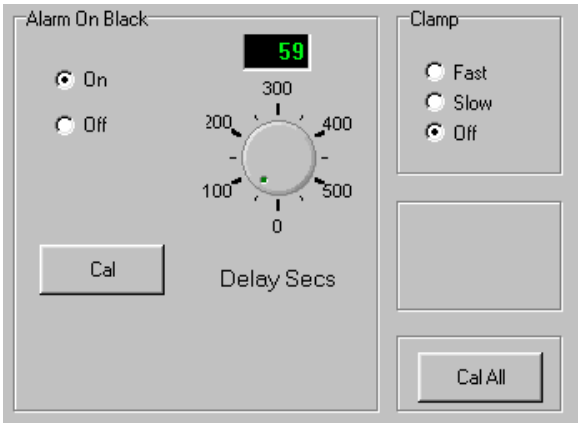
Although the input standard is detected automatically, it may help to match the on-board video content error detection with the precise input video standard. Use the Input standard check boxes to select the standard that matches the actual input present.

Std	Default	Alternatives
625	PAL-B, -G, -H or -I.	PAL-N and PAL-N (Argentina).
525	NTSC-M	PAL-M and NTSC-M (Japan).

3.2 Setting alarm/clamp options and recalling factory defaults

The Alarm on black area provides access to the following:

- Alarm on black on/off/delay
- Clamp – fast, slow, off
- Set defaults – Cal All



Alarm on black, Clamp and Cal All

Alarm on black

Use the rotary control to adjust the delay time after which dark (<15% luma) picture content sets an alarm. The delay is adjustable in 1 second steps from 1 second to 10 minutes. Check the Off box to disable the dark alarm and the corresponding GPI output.

Output clamp

Check an appropriate clamp option. Fast provides a recovery time of approximately 6 lines. Slow provides a recovery time of approximately 60 lines. Off selects an AC-coupled output.

Cal all

Click on Cal All to clear all user adjustments and set the VDA110R to factory defaults.

4 Using the active control panel

This operational guide assumes that the panel has been setup according to the Panel setup procedure described in the Crystal Vision Controls Panel manual.

Note: It is **ESSENTIAL** that the Panel setup procedure is followed and any old or unknown passwords cleared prior to using the panel for the first time.

At power up, the two line 20-character screen will display 'Crystal Vision' followed by the firmware version number for the control panel. All eight control panel key LEDs will illuminate.

The Crystal Vision control panel start up display

'Control Panel' then briefly replaces the version number display.

If the control panel firmware has been updated for Statesman control (version 1.5.0 or higher), Statesman Mode will be entered and the message, 'Press CAL to Exit' will be displayed and the CAL LED will light.

Statesman mode is entered by default

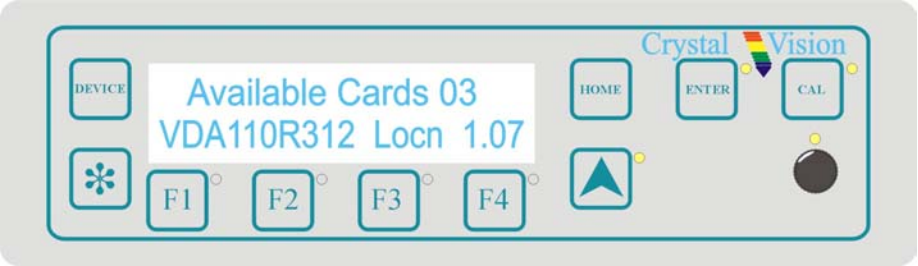
To continue with control panel operation or configuration, press the ‘CAL’ key once. A second press of the ‘CAL’ key will return to Statesman control.

The control panel will display the name of the card that first responds to the polling request together with its location number.

The location number consists of the frame number plus the card position in the frame.

Selecting the VDA110R

To select a particular card in a frame, press the DEVICE key to go to the Device menu. The top line of the display will show ‘Available Cards X’, where X is the number of cards that have responded so far to the polling request.



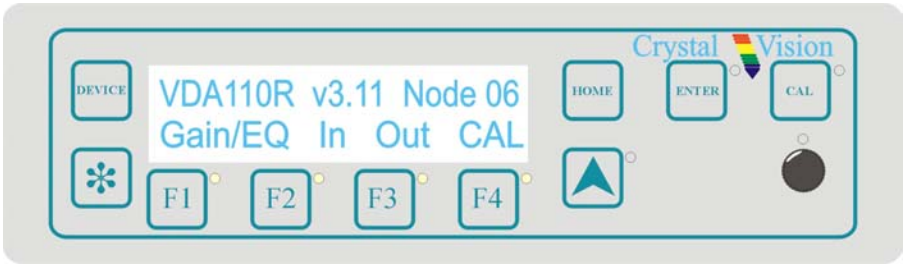
Device menu showing available cards

Rotate the shaft encoder and the bottom row will display the successfully polled cards by name and location or slot number.

In the example above, the card displayed is located in the first frame in slot number 12.

When the desired card is selected press the ENTER key to access that card’s HOME menu.

If remote control has been enabled, the control panel will then enter card mode and communicate with the VDA110R at the node number last displayed in the available cards list. If the card is in local mode, 'Remote Ctrl Disabled' will be displayed.



The VDA110R home menu

Note: The VDA110R will need to have the card edge local/remote switch (lever 2) in the DOWN position to enable active or remote control panel operation. Refer to the Card edge operation chapter or Installation chapter for more information.

Navigating the display

The functions assigned to control panel keys are dependent on the card selected for control, and the panel mode. The following list illustrates the functions when controlling a VDA110R.

- DEVICE – enters Device menu to select a card or card to control / enter Panel setup when held down during power up / shows frame status when pressed from Statesman mode
- CAL – Enter or leave Statesman mode / enter panel diagnostics mode when held down during power up / set default value when enabled
- Asterisk – enters board rename menu from the Device menu
- F1 to F4 – soft keys, function assigned within each menu
- HOME – moves the display to the home menu
- ENTER – accept current selection
- Upward arrow – used to move up the menu structure / enter lock panel menu from the Device menu
- Rotary control – shaft encoder used to select options or variable data

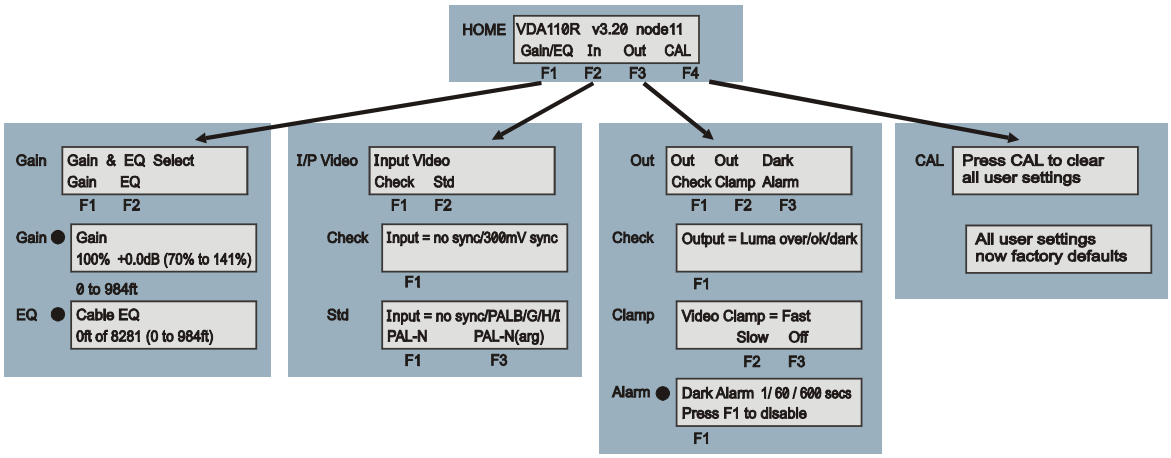
Note: Please refer to the Crystal Vision Control Panel manual for details of the Panel Setup, Lock Panel and Diagnostic menus.

4.1 The VDA110R menu structure

The main top-level menus for the VDA110R module are obtained by pressing the F1, F2, F3 and F4 keys from that module's HOME menu. Menu keys are illuminated when active and when further menus are available. The four top-level menus are:

- Video gain and/or EQ – press F1
- Input menu – press F2
- Output menu – press F3
- CAL – press F4

The following chart shows the available menus.



The VDA110R menu tree

Note: Function keys and shaft encoder LEDs are illuminated when active.
Menus associated with the shaft encoder for changing assigned values are shown with a black circle.

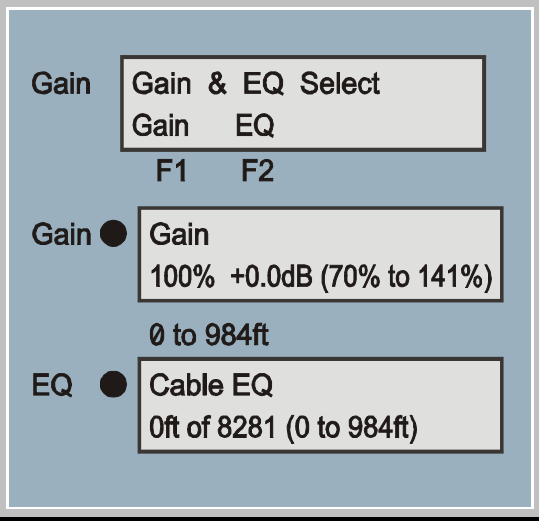
Shorthand codes

The following shorthand codes are used in active control panel menus:

Menu code	Function description
EQ	Equalisation
Std	Video standard
Clamp	DC restoration

4.2 Adjusting video gain and EQ

Pressing F1 from the home menu will display the gain/EQ menu.

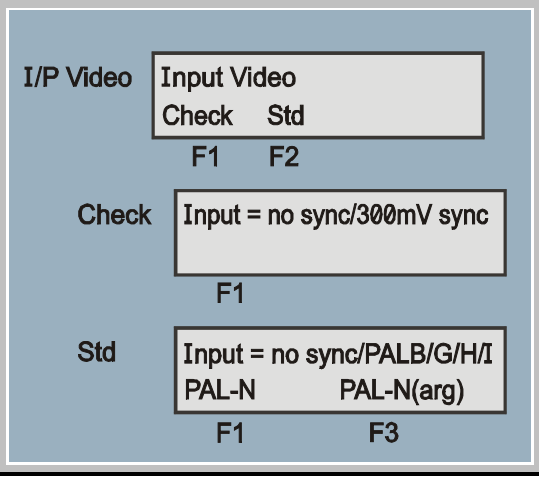
Channel gain menu	Description
	Press the F1 key for the gain menu Press the F2 key for the equalisation menu Rotate the shaft encoder to vary the video gain in 0.025dB steps from 70% (-3.0dB) to 141% (+3.0dB). Press CAL button to restore 0dB gain. Rotate the shaft encoder to vary the input video equalisation from zero to 984 feet of Belden 8281 or similar cable. Press CAL button to restore zero equalisation.

Note: The gain values in remote mode and local mode may be different to each other and are retained through power down, and restored when the unit is powered up.

4.3 Input video status and settings

Pressing F2 from the home menu will display the I/P video sync status and set input standard to optimise error correction:

- Check – Input horizontal sync status
- Std – Display/set input standard (to optimise error detection)

Channel gain menu	Description
	Press the F1 key to view the input sync status Press the F2 to set input standard details Displays status of input horizontal sync pulse. Press the F1 or CAL button to update the screen with current status. Matches the on-board video content error detection with the input video standard.

Note: The input sync is of the form nnnmV sync , where nnn is the sync-tip to blanking level in millivolts.
Expected value is 300mV for PAL-B, PAL-G, PAL-H, PAL-I or PAL–N (Argentina).
Expected value is 286mV for NTSC-M, PAL-M or PAL-N.

Although the input standard is detected automatically, it may help to match the on-board video content error detection with the precise input video standard.

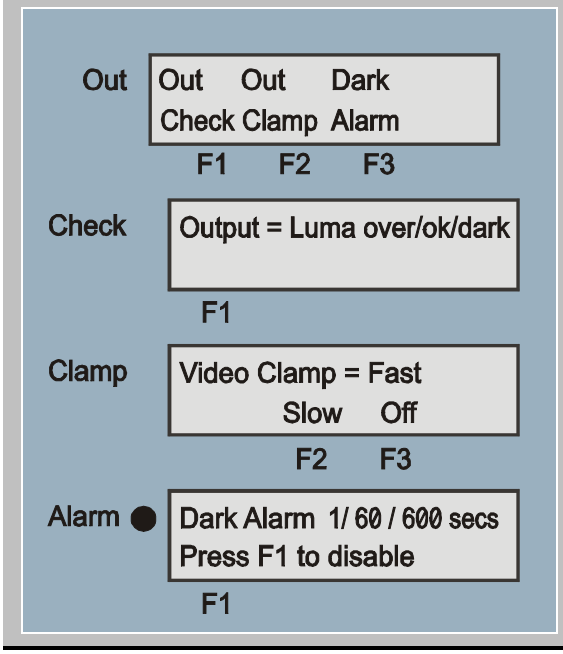
The input standard defaults with a 625-line input to PAL-B, -G, -H or -I. Press the F1 key to set PAL-N, press F3 to set PAL-N (Argentina).
With a 525-line input it defaults to NTSC-M. Press the F1 key to set PAL-M, press F3 to set NTSC-M (Japan).

4.4 Adjusting alarm settings

Pressing F3 from the home menu will display the Output menu.

The following settings can be adjusted:

- Check – output luminance status
- Clamp – display/set DC restoration setting
- Alarm – Set dark alarm settings

Channel gain menu	Description
	Press the F1 key to view output luminance status Press the F2 key to set output DC restoration Press the F3 key to set the Dark Alarm settings Displays status of output luminance content. Press the F1 key to update the screen with current status. Display/set DC restoration type. Press F2 or F3 to cycle though the available choices: Fast, Slow or Off. Adjusts period after which dark (<15% luma) picture content sets an alarm. Press the CAL key to set the dark decay to the default of 60 seconds. Press the F1 key disables the dark & clip alarms.

Notes:

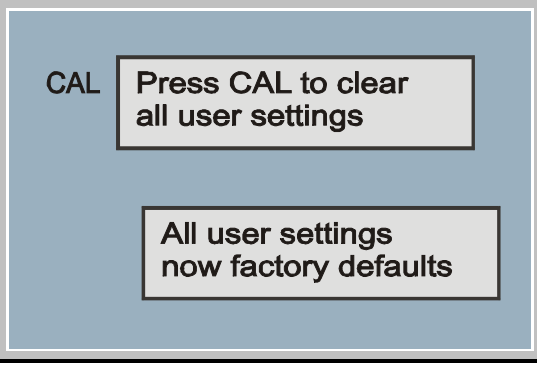
Output luminance status is one of the following:
Ok: Output luma levels between 15% and 110% of peak white.
Dark: Output luma levels less than 15% of peak white for a period determined by Dark Alarm menu.
Over: Output luma levels greater than 110% of peak white.

Video clamp defaults to Fast (approximately 6 lines recovery time). F2 button press sets clamp to Slow (approximately 60 lines recovery time). F3 button press sets clamp to Off (AC-coupled output).

Dark alarm timer adjustable in 1 second steps from 1 second to 10 minutes. F1 button press disables the dark & clip alarms and their corresponding GPI outputs.

4.5 Recalling factory defaults

Pressing the F4 key provides access to factory defaults recall (CAL) menu.

Channel gain menu	Description
	Press F4 from the home menu to display the CAL menu Press the CAL key to clear all user adjustments & set the VDA110R to factory defaults.

5 Card edge operation

Once the start-up initialisation procedure is complete, the VDA110R card can be controlled or configured from the card edge, the active control panel or the Statesman PC interface. This chapter will concentrate on the card edge controls.

The front edge of the card provides power rail monitoring, signal status, gain/EQ adjustment, output clamp type, dark and clip GPI alarm settings and remote/local selection.

VDA110R front edge view

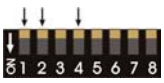
The 8-way piano switch allows the card settings be adjusted.

Lever	Function	UP	DOWN
1	CAL	Rotate ADJUST to alter the selected parameter (local control only)	Rotate ADJUST to calibrate the selected parameter (local control only)
2	REMOTE	Front-panel (local) control	Serial remote control
3	Not used	Not used	Not used
4	EQ / GAIN	Rotate ADJUST to alter cable equalisation (local control only)	Rotate ADJUST to alter gain (local control only)
5	ALARM	Dark and Clip alarm GPI outputs enabled (local control only)	Dark and Clip alarm GPI outputs disabled (local control only)
6	SLOW	Fast (6 lines) output DC restore (local control only)	Slow (60 lines) DC restore (local control only)
7	AC	DC-restored video output (local control only)	AC-coupled video output (local control only)
8	Not used	Not used	Not used

8-Way piano switch menu functions

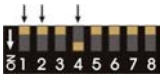
The VDA110R is supplied factory-set with zero cable equalisation and 0dB gain.

EQ



DIL levers 1, 2 and 4 UP: Cable Equalisation continuously variable from 0 to 300m using the ADJUST control

GAIN



DIL levers 1, 2 UP, 4 DOWN: Gain continuously variable ± 3.0dB using the ADJUST control

Video monitoring test point

A 75Ω monitoring output is provided on two test hooks at the board edge. White is Monitor Out, black is Ground.

LED indication

LED	Location/colour	Action
IN	Green (bottom)	Composite / Y + sync / Green + sync input signal present.
ERROR	Red (top)	Input sync size <90% or >110% of expected value.
DARK	Red (bottom)	Output luma level <15% of peak white for an extended period (set by timer)
CLIP	Red (top)	Output luma levels >110% of peak white
525	Yellow (bottom)	525-line signal input
625	Yellow (top)	625-line signal input
PSU	Green	Power supply OK.

LED indicators

6 Hardware installation

The VDA110R single channel video distribution amplifier fits into all Crystal Vision rack frames. All modules can be plugged in and removed while the frame is powered without damage.

6.1 Universal rear connectors

The 2U Indigo or FR2AV frame will house up to 12 modules and dual power supplies. The 1U Indigo or FR1AV frame will house 6 modules and a single power supply. The 1U Desk Top Box has built-in power supply and will house up to 2 modules.

The 1U and 2U frames have a hinged front panel that gives access to the PSU and all modules. The Desk Top Box has a removable front. The universal frame wiring system allows any of the interface range of modules to be fitted in any position with the use of removable rear modules.

There are six types of rear connector available which provide system flexibility by allowing a mix between total I/O access and module packing density.

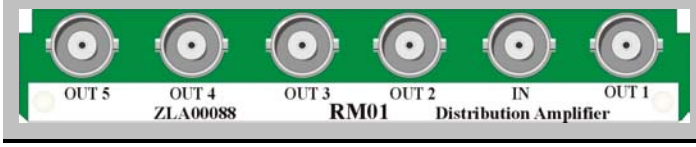
The VDA110R may be used with the RM01 and RM09 single slot rear connector for up to 12 modules, the RM02 and RM10 quadruple slot rear connectors for up to 4 modules and the RM16 and RM18 double slot rear connectors for up to 6 modules in a 2U frame.

The following table summarises the rear connectors available and their recommended use with either the single channel VDA110 or the dual channel VDA210.

Connector	No of Slots	No of Cards *	Loop-throughs	VDA110	VDA210	Differential inputs
RM01	1	1	No	1 in 5 out	2 in 2 x 2 out	No
RM09	1	1	1	1 in 4 out	Not used	Yes
RM15	2	1	2	Not used	2 in 2 x 4 out	Yes
RM16	2	1	1	1 in 10 out	Not used	1st input only
RM18	2	1	No	1 in 10 out	2 in 5 out / 5 out	1st input only
RM02	4	3	No	1 in 8 out	2 in 3 out / 4 out	1st input only
RM10	4	3	1	1 in 10 out	Not used	Yes

Notes: *Table shows no of cards per rear connector.
Passive loop-throughs are independent of the amplifier; the module may be removed without losing the looped-through source.

Rear module connections with RM01

RM01 fits in all frames	Description
	**RM01** • 12 modules in 2U, 6 in 1U & 2 in a DTB • All frame slots can be used

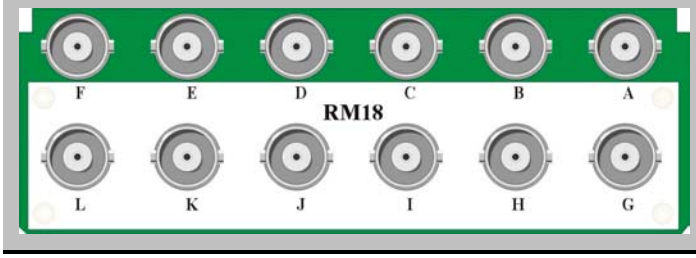
BNC	Signal assignment
IN	Input.
OUT 1	Output
OUT 2	Output
OUT 3	Output
OUT 4	Output
OUT 5	Output

Rear module connections with RM09

RM09 fits in all frames	Description
	**RM09** • 12 modules in 2U, 6 in 1U & 2 in a DTB • All frame slots can be used

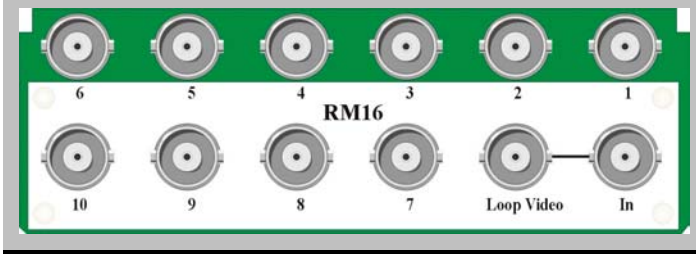
BNC	Signal assignment
IN	Input.
LOOP IN	Input loop through
OUT 1	Output
OUT 2	Output
OUT 3	Output
OUT 4	Output

Rear module connections with RM18

RM18 fits in all frames	Description
	**RM18** • 6 modules per 2U frame, 3 per 1U frame, 1 per DTB • 1 module per rear connector • 6 connections available • Card fits in upper slot • No card fits in lower slot

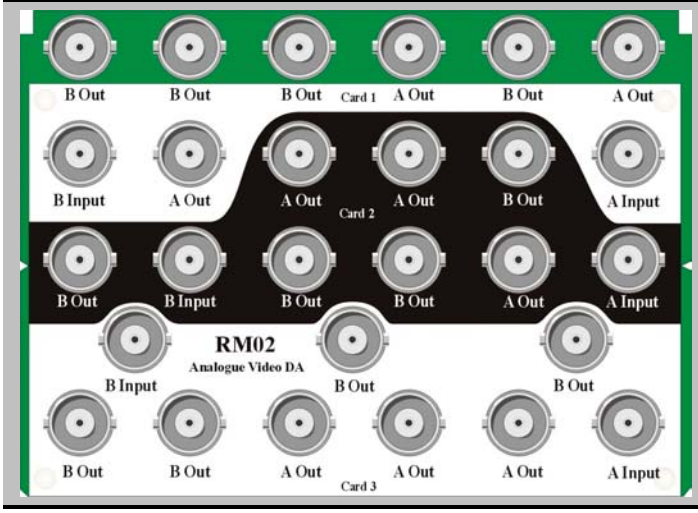
BNC	Signal
A	Output
B	Input
C	Output
D	Output
E	Output
F	Output
G	Output
H	Output
I	Output
J	Output
K	Output
L	Output

Rear module connections with RM16

RM16 fits in all frames	Description
	**RM16** • 6 modules per 2U frame, 3 per 1U frame, 1 per DTB • 1 module per rear connector • 6 connections available • Card fits in upper slot • No card fits in lower slot

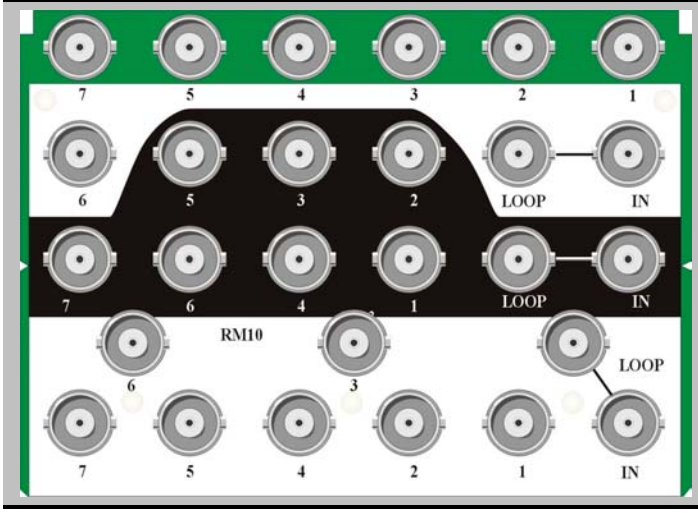
BNC	Signal
In	Input
Loop Video	Loop Video
1	Output
2	Output
3	Output
4	Output
5	Output
6	Output
7	Output
8	Output
9	Output
10	Output

Rear module connections with RM02

RM02 fits in Indigo and FR2AV frames	Description
	**RM02** • 9 modules per 2U frame • 3 modules per rear connector • 9 connections available • Card 1 fits in slots 1, 5 and 9 • Card 2 fits in slots 2, 6 and 10 • Card 3 fits in slots 4, 8 and 12 • No card fits in 3, 7 or 11

BNC	Signal
A Input	Input
B Input	Output
A Output	Output
B Output	Output

Rear module connections with RM10

RM10 fits in Indigo and FR2AV frames	Description
	**RM10** • 9 modules per 2U frame • 3 modules per rear connector • 9 connections available • Card 1 fits in slots 1, 5 and 9 • Card 2 fits in slots 2, 6 and 10 • Card 3 fits in slots 4, 8 and 12 • No card fits in 3, 7 or 11

BNC	Signal
IN	Input
LOOP	Input loop through
1	Output
2	Output
3	Output
4	Output
5	Output
6	Output
7	Output

6.2 General purpose interface

GPI outputs use switch-closure to indicate VDA110R status. When closed-circuit, the GPI line is connected to Frame Ground.

GPI	Closed-circuit (Ground)	Open-circuit
'a'	Input 1 absent	Input 1 present
'b'	Input 1 luma <15% peak white	Input 1 luma >15% peak white
'c'	Input 1 luma >110% peak white	Input 1 luma <110% peak white
'd'	Not used	Not used
'e'	Not used	Not used
'f'	Not used	Not used

The following tables show the GPI pinout for each frame:

2U frame GPI Connections

GPI lines 'a' to 'f' of each card connect to one of four rear remote connectors as follows:

Slot no.	'a' pin	'b' pin	'c' pin	'd' pin	'e' pin	'f' pin
1	8 (1)	9 (1)	18 (1)	26 (1)	19 (2)	20 (2)
2	7 (1)	16 (1)	17 (1)	25 (1)	10 (2)	11 (2)
3	8 (3)	9 (3)	18 (3)	26 (3)	19 (4)	20 (4)
4	7 (3)	16 (3)	17 (3)	25 (3)	10 (4)	11 (4)
5	5 (1)	6 (1)	15 (1)	24 (1)	1 (2)	2 (2)
6	4 (1)	14 (1)	13 (1)	23 (1)	3 (2)	4 (2)
7	5 (3)	6 (3)	15 (3)	24 (3)	1 (4)	2 (4)
8	4 (3)	14 (3)	13 (3)	23 (3)	3 (4)	4 (4)
9	3 (1)	12 (1)	22 (1)	21 (1)	12 (2)	13 (2)
10	10 (1)	11 (1)	19 (1)	20 (1)	21 (2)	22 (2)
11	3 (3)	12 (3)	22 (3)	21 (3)	12 (4)	13 (4)
12	10 (3)	11 (3)	19 (3)	20 (3)	21 (4)	22 (4)

Table shows Pin number (Remote number)

Note: Remote 1 and Remote 3 are 26 way high density 'D' type female sockets and frame ground is pin 2 and +5V @500mA is pin 1 in each case.
Remote 2 and Remote 4 are 26 way high density 'D' type male plugs and frame ground is pin 6 and +5V @500mA is pin 15 in each case.

1U frame GPI connections

GPI lines 'a' to 'f' of each card connect to one of two rear remote connectors as follows:

Slot no.	'a' pin	'b' pin	'c' pin	'd' pin	'e' pin	'f' pin
1	8 (1)	9 (1)	18 (1)	26 (1)	19 (2)	20 (2)
2	7 (1)	16 (1)	17 (1)	25 (1)	10 (2)	11 (2)
3	5 (1)	6 (1)	15 (1)	24 (1)	1 (2)	2 (2)
4	4 (1)	14 (1)	13 (1)	23 (1)	3 (2)	4 (2)
5	3 (1)	12 (1)	22 (1)	21 (1)	12 (2)	13 (2)
6	10 (1)	11 (1)	19 (1)	20 (1)	21 (2)	22 (2)

Table shows Pin number (Remote number)

Note: Remote 1: 26 way high density D-type socket. Frame ground is pin 2 and +5V @500mA is pin 1.
Remote 2: 26 way high density D-type plug. Frame ground is pin 6 and +5V @500mA is pin 15.

Desk top box GPI connections

GPI lines 'a' to 'f' of each card connect to the rear remote connector as follows:

Slot no.	'a' pin	'b' pin	'c' pin	'd' pin	'e' pin	'f' pin
1	1	2	3	4	5	6
2	9	10	11	12	13	14

Note: Remote connector is 15 way normal density D-type socket. Frame ground is pin 15.

6.3 Configuration

The VDA110R is equipped with two on-board jumper links PL2 (75R/HiZ) and PL7 (Setup) as shown below:

Other settings or adjustments on the card should normally be left in the factory default positions.

VDA110R showing configuration jumpers

Changing the input termination

Move jumper PL2 to the appropriate position to set the input termination to either 75Ω or high impedance.

PL2 – Input termination

Link position	Impedance
75R (top)	Terminated 75Ω
Loop-through (bottom)	High-impedance

Changing the output setup (local mode only)

Move PL7 to the appropriate position to change the setup option in local mode.

PL7 – Setup select (local control mode only)

Link position	Standard
(left)	Input is NTSC-M (Japan), PAL-B,G,H,I or PAL-N (Argentina) i.e. without +7.5 IRE setup
SETUP (right)	Input is NTSC-M, PAL-M or PAL-N i.e. with +7.5 IRE setup

Note: The output setup setting set by the jumper is valid for local mode only. Other values for setup may be applied when remote or Statesman control are active.

Changing the GPI output drive

As supplied, each GPI output can drive a 24V bulb. For 5V LED drive, resistors R146, R148 and R150 (labelled 'A', 'B' and 'C') must be changed from 0Ω to 680Ω 0805 surface-mount types.

The module can be supplied with LED drive resistors if requested at the time of ordering.

Note: Other adjustments on the card should normally be left in the factory default positions.

7 Problem solving

The front edge of the card provides useful power rail and video monitoring in addition to card-edge controls and status LEDs.

VDA110R front edge view

Video monitoring test point

A 75Ω monitoring output is provided on two test hooks at the board edge. White is Monitor Out, black is Ground.

LED indication

LED	Location/colour	Action
IN	Green (bottom)	Composite / Y + sync / Green + sync input signal present.
ERROR	Red (top)	Input sync size <90% or >110% of expected value.
DARK	Red (bottom)	Output luma level <15% of peak white for an extended period (set by timer)
CLIP	Red (top)	Output luma levels >110% of peak white
525	Yellow (bottom)	525-line signal input
625	Yellow (top)	625-line signal input
PSU	Green	Power supply OK.

LED indicators

The PSU green LED indicates good power rails when lit.

The yellow LEDs indicate the detected input standard (top for 625 and bottom for 525).

The top left hand red LED lights if an input error is detected, the lower left hand green LED lights when an input is present.

The middle top red LED lights if a clip error (luminance overload) is present and the lower middle red LED lights if the input remains black for greater than the dark detect delay period.

Basic fault finding guide

The Power OK LEDs are not illuminated

Check that the frame PSU is functioning – refer to the appropriate frame manual for detailed information

Check that the card is seated correctly in the frame

There is no video output

Check that a valid video input is present and that any cabling is intact

The video output is low quality

Check that the cable equalisation is correct for the input cable and that the maximum length has not been exceeded

The Statesman sync indicator (yellow) or card edge error LED (red) is on

Check that the input video/syncs have not been 'double terminated'. An active panel will read the actual sync level in the input menu.

The dark (black picture) LED/GPI Alarm triggers too often

Check that the dark detect delay has not been set too low

The output exhibits low frequency errors or DC restoration problems

Try changing the video clamp setting

Do the GPI outputs drive LEDs or bulbs?

GPI drive resistors R148, 148 and 150 should be ZERO Ohms (default) to drive bulbs and 680 Ohms to drive LEDs. Refer to section 6.2 for further details.

The card no longer responds to card edge or Statesman/front panel control

Check that the card is seated correctly and that the Power OK LEDs are lit

Check any active control panel/Statesman cabling

Check if the control panel/Statesman can control another card in the same rack

If necessary re-set the card

Re-setting the card

If required, the card may be reset by simply removing the rack power and re-applying power after a few seconds or by removing the card from the rack and then re-inserting the card

It is safe to re-insert the card whilst the rack is powered

8 Specification

General

Dimensions	100mm x 266 mm module with DIN 41612 connector
Weight	170g
Power consumption	6 W

Inputs

Video	1 analogue. Input loop-through available with selected rear modules

Outputs

Number and type:	10 (maximum) cable-equalised analogue

Gain adjustment

Continuous adjustment:	± 3.0dB

Cable Equalisation

Continuous adjustment:	0 to 300m Belden 8281 or equivalent

Performance

Frequency response:	± 0.05dB 0 to 6MHz.
Differential phase:	< 1°
Differential gain:	< 1%
Signal to noise ratio:	< -60dB weighted

Clip detectors

Number:	One
Output luma levels:	>110% of peak white

Dark detectors

Number:	One
Detect level:	Output luma level <15% of peak white for an extended period (set by timer)

GPI lines

Outputs:	6 (D-type on frame)
	Input presence, dark detect and clip detect

Status monitoring

LED display	Front of card edge visual monitoring with LED indicators to indicate: PSU rails present Dark, Clip 525/625

Ordering information

VDA110R	Analogue video distribution amplifier w/remote control
Statesman	PC Control System
Indigo 2	2U frame without active control panel for up to 12 modules
Indigo 1	1U frame without active control panel for up to 6 modules
Indigo DT	1U Desk top box without active control panel for up to 2 modules
Indigo 2A	2U frame with active control panel for up to 12 modules
Indigo 1A	1U frame with active control panel for up to 6 modules
Indigo DTA	1U Desk top box with active control panel for up to 2 modules
Indigo 2S	Statesman enabled only 2U frame for up to 12 modules
Indigo 1S	Statesman enabled only 1U frame for up to 6 modules
Indigo DTS	Statesman enabled only 1U Desk top box for up to 2 modules
RM01	Single slot rear module with 6 BNCs
RM09	Single slot rear module with 6 BNCs. Allows single loop-through
RM02	Quad slot rear module with 27 BNCs for 3 boards
RM10	Quad slot rear module with 27 BNCs for 3 boards. Allows loop-through for single VDAs
RM16	Dual slot rear module for 1 VDA with 12 BNCs. Allows single loop-through
RM18	Dual slot rear module for 1 VDA with 12 BNCs