

digital keying modular
interface audio
converters analogue video

Smart DA

Monitoring Distribution Amplifier

USER MANUAL



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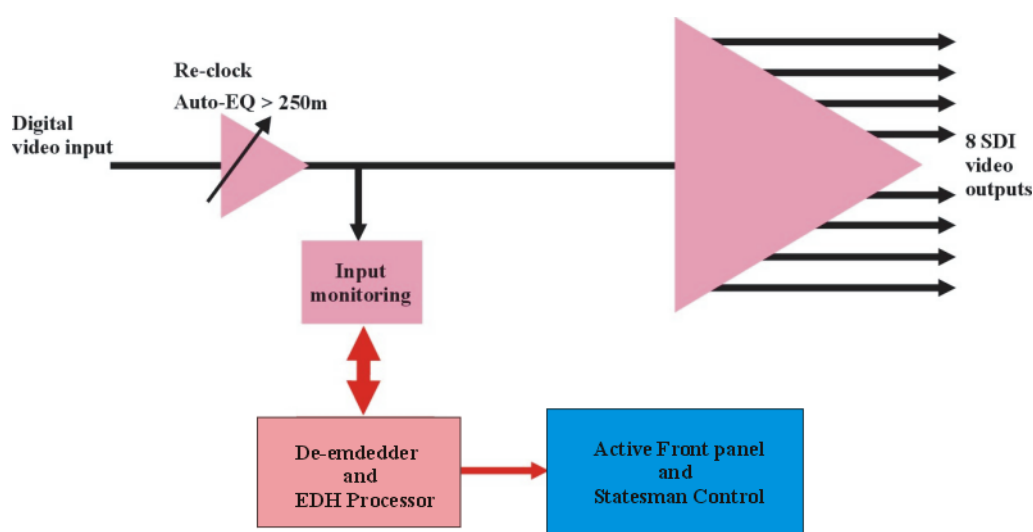
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Revision 1 Statesman GUIs and descriptions updated. 17-01-07

1 Introduction

Smart DA is an SDI distribution amplifier with on board signal monitoring facilities. Combined with an active front panel or Statesman PC control system, both video and embedded audio status can be viewed. Depending on the rear module used, Smart DA will give either five or eight SDI outputs.



Smart DA intelligent Distribution Amplifier

Smart DA monitors the following parameters:

- Input present
- Input standard
- Video black
- Video frozen
- Audio group present
- Audio silence
- EDH monitoring, missing, full field error and active picture error.
- GPI output of selected alarms

Smart DA is a 100mm x 266mm module, which fits in Crystal Vision's four standard frames and can be integrated with any boards from the company's full product range. It can be used with three different frame rear modules, with the RM01 giving five SDI outputs and the RM02 and RM18 both giving eight.

Applications include immediate indication of signal or transmission problems in large systems especially in unmanned automatic playout facilities or as a simple signal probe.

2 Hardware installation


The Smart DA single height module can be used with the RM01, RM02 and RM18 rear connectors, which will fit into all Crystal Vision rack frames. All modules can be connected or removed while the frame is powered, without damaging the board.

2.1 Rear modules and signal I/O

The Indigo 4 4U frame will house up to 24 single height modules with up to three power supplies. The Indigo 2 and FR2AV 2U frames will house up to 12 single height modules and dual power supplies. The Indigo 1 and FR1AV 1U frames will house six single height modules and a single power supply. The Indigo DT DTBAV and DTBAV desk top boxes both have a built-in power supply and will house up to two single height modules.

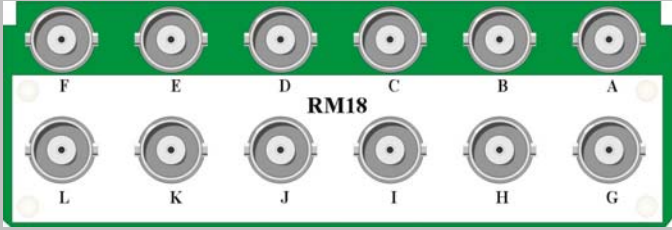
Note: For details of fitting rear connectors please refer to the appropriate frame manual

Rear module connections with RM01

RM01 fits in all frames	Description
	RM01 <ul style="list-style-type: none"> • 24 Smart DA modules per Indigo 4 frame • 12 per Indigo 2 or FR2AV frame • Six per Indigo 1 or FR1AV frame • Two per Indigo DT • All frame slots can be used

BNC	I/O assignment
SDI OUT(1)	Reclocked SDI output
SDI IN	SDI input
SDI OUT(2)	Reclocked SDI output
SDI OUT(3)	Reclocked SDI output
SDI OUT(4)	Reclocked SDI output
SDI OUT(5)	Reclocked SDI output

Rear module connections with RM18

RM18 fits in all frames	Description
	<p>RM18</p> <ul style="list-style-type: none"> • 12 Smart DA modules per Indigo 4 frame • Six per Indigo 2 or FR2AV frame • Six per Indigo 1 or FR1AV frame • Two per Indigo DT • Card fits in upper slot • No card fits in lower slot

BNC	I/O assignment
A	N/C
B	SDI input
C	Re-clocked SDI output
D	Re-clocked SDI output
E	Re-clocked SDI output
F	Re-clocked SDI output
G	N/C
H	Re-clocked SDI output
I	Re-clocked SDI output
J	Re-clocked SDI output
K	N/C
L	Re-clocked SDI output

Rear module connections with RM02

RM02 fits in a 2U Indigo or FR2AV frame	Description
	<p>RM02</p> <ul style="list-style-type: none"> • 12 Smart DA modules per Indigo 4 frame • Nine modules per 2U frame • Three modules per rear connector • Nine 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	I/O assignment
SDI IN	SDI input
1	Reclocked SDI output
2	Reclocked SDI output
3	Reclocked SDI output
4	Reclocked SDI output
5	Reclocked SDI output
6	Reclocked SDI output
7	Reclocked SDI output
8/IN2	Reclocked SDI output

2.2 General Purpose Interface (GPI)

Each frame slot has up to six connections 'a-f' for GPI control and monitoring. These connections are available at the rear of the frame on the 26-way D type Remote connectors.

GPI	Default	Statesman configured	Low (<1V)	High (+5V)
1	'a' Input Missing	See table.	Alarm condition	Non- alarm
2	'b' Input frozen or black			
3	'c' No function			
4	'd' No function			
5	'e' No function			
6	'f' No function			

As supplied, each GPI output has a 220Ω resistor in series with its output. This allows for an external LED to be driven, connected to a DC voltage of +5V.

GPI 1 and GPI 2 can be configured to show an alarm condition for any individual or group of error conditions. Configuration of the GPI reporting can only be carried out using either an active control panel or Statesman.

Reportable error conditions
Silence from any channel 1-4 of selected group for longer than set interval
Video input not present
Video input standard changed
Video picture black for longer than set interval
Video picture frozen for longer than set interval
EDH error
EDH missing

Note. When set to local control, GPI input present/missing will react immediately to a loss of input signal. GP2 will report an error only if any of the monitored parameters are incorrect for approximately 30 seconds. Error delay is not variable in local mode.

4U frame GPI connections

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

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

Table shows pin number (Remote number)

Note: Remote 1, Remote 3, Remote 5 and Remote 7 are 26 way high-density D-Type female sockets. Frame ground is pin 2 and +5V @500mA is pin 1 in each case.
Remote 2, Remote 4, Remote 6 and Remote 8 are 26 way high-density D-Type male plugs and frame ground is pin 6 in each case and +5V @500mA is pin 15 on Remote 2 and Remote 6.
Note. The +5V output is protected by self-resetting thermal fuses, which limit the total output current available from Remotes 1-4 to approximately 1A. Remotes 5-8 are similarly protected.

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. 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 in each case and +5V @500mA is pin 15 on Remote 2.
Note. The +5V output is protected by self-resetting thermal fuses, which limit the total output current available from Remotes 1-4 to approximately 1A.

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 female socket. Frame ground is pin 2 and +5V @500mA is pin 1.
Remote 2: 26 way high-density D-Type male plugs and frame ground is pin 6 and +5V @500mA is pin 15
Note. The +5V output is protected by self-resetting thermal fuses, which limit the total output current available from Remotes 1-2 to approximately 1A.

DTB-AV 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.

Indigo DT 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	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)

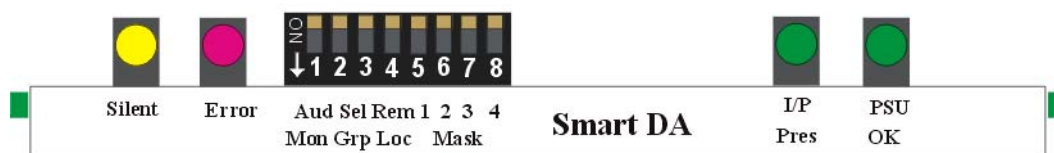
Table shows pin number (remote number)

Note: Remote 1: 26 way high-density D-Type female socket. Frame ground is pin 2 and +5V @500mA is pin 1.
 Remote 2: 26 way high-density D-Type male plugs and frame ground is pin 6 and +5V @500mA is pin 15
 Note. The +5V output is protected by self-resetting thermal fuses, which limit the total output current available from Remotes 1-2 to approximately 1A.

3 Card edge operation

The Smart DA card is designed to be controlled primarily from a remote panel, therefore it has been given only limited card edge control. This chapter will concentrate on these card edge controls.

The front edge of the card provides power rail monitoring, error reporting and monitor configuration.



Smart DA front edge view

3.1 Card-edge switch settings

The 8-way piano switch allows control options to be selected.

Lever	Function	Action
1	Audio Monitoring	Set lever 1 down to disable audio monitoring.
2	Select audio group	UP, UP Group 1
3		Down, UP Group 2
4	Remote/Local	UP, Down Group 3
5	Mask Ch1 alarm	Down, Down Group 4
6	Mask Ch2 alarm	Set level 5 down to mask Ch1 silence indication.
7	Mask Ch3 alarm	Set level 6 down to mask Ch2 silence indication.
8	Mask Ch4 alarm	Set level 7 down to mask Ch3 silence indication.

8-Way piano switch menu functions

Audio Monitoring

In the absence of embedded audio in the video signal it is necessary to disable audio monitoring to prevent a continuous error condition. Setting level 1 to down disables audio monitoring.

Audio group selection.

Embedded audio within the video signal is contained within four groups. The positions of Levers 2 and 3 select which of the four groups within the video signal Smart DA's de-embedder will monitor.

Audio Group	Lever 2	Lever 3
1	UP	UP
2	DOWN	UP
3	UP	DOWN
4	DOWN	DOWN

Remote local

Lever 4 selects between card-edge control or remote mode. A more comprehensive control of the Smart DA's monitoring functions is available when controlled remotely.

In local mode both Statesman and active front panel will still monitor all video parameters but will have no control of audio group, channel or GPI selection.

Channel masks

Often not all four channels within an audio group will have active audio present. This will cause a continuous silence error to be present when the Smart DA is set to local mode. Any intentionally silent channels can have their alarms suppressed by setting levers 5 – 8 in the DOWN position.

3.2 Reading card edge LEDs

Card edge LEDs may be used to interrogate the status of a video signal.

Refer also to the trouble-shooting chapter for more help with solving problems and monitoring status information.

The following table summarises the card edge LED functions and colours:

Name	Led Colour	Function when ON
Silence	Yellow	An audio channel has been silent for more than 30 seconds
Error	Red	One or more errors in the video signal have been detected
Input present	Green	Input video present
PSU OK	Green	Good power supply (PSU) rails.

Tip. When a silence alarm is activated, levers 5 – 8 can be used to identify which channel or channels are silent.

4 Using the active front panel

4.1 Module selected

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

Note: It is **ESSENTIAL** that the panel set-up 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 keys 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.

Navigating the display

The functions assigned to control panel keys are:

DEVICE – enters Device menu to select a card or show cards available / enters panel set-up when held down during power up / shows frame status when pressed from Statesman mode

CAL – enters or leaves Statesman mode / enters panel diagnostics mode when held down during power up / updates the display

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

Menu numbering scheme

This manual uses a simple menu numbering convention based on the sequence of keys required to reach each menu from the top level home menu. For example, menu 1.1.2 is reached from the home menu by pressing F1, then F2. Menu 1.2.3 is reached by pressing F2 and then F3. Further options can be reached by using the shaft encoder to scroll up or down.

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

Selecting Smart DA

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.



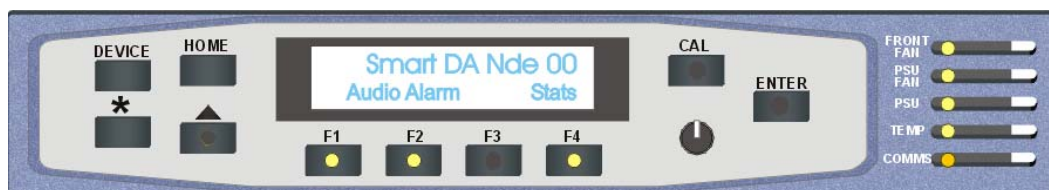
The available cards menu

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 3.

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

The message shows that a Smart DA has been selected.



The Smart DA home menu

Updating the display

The values displayed on an active front panel are only updated when an adjustment is made and when changing menu level. If changes occur through the use of card edge controls or other remote control, the text displayed on the active front panel will not be updated immediately. If necessary, use the upward arrow to leave and then re-enter a menu to update the display.

The Smart DA active panel menu structure

At any time the main top-level menu (Home) is obtained by pressing the HOME key. From the home menu further selections can be made. Active function keys are indicated by illuminated, integrated LEDs.

The main top-level menus for the Smart DA module are obtained by pressing the F1- F4 keys from the HOME menu. Menu keys are illuminated when active and when further menus are available. The top-level menus are:

- Audio (Group to be monitored) – press F1
- Alarms (Configure Frozen, Black and Silence delays) – press F2
- Stats (Status) – press F4

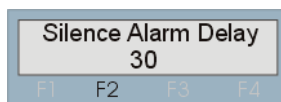
When a sub menu has been selected, further options may be obtained by using the shaft control to scroll through them. Once the desired option has been located, a selection or value change can be made by either toggling the appropriate function key or by selecting and using the shaft control to alter a numerical value. A configuration change or value will be activated as the shaft control is rotated or function button is toggled. The variable being adjusted will appear in brackets. Pressing Enter will fix the new value.

The following chart shows the available Smart DA menus. The actual menus available may vary slightly as software is updated.

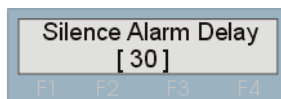
Example: to adjust the Silence alarm delay.

From the Home menu select the Alarm sub-menu by pressing F2. Rotate the shaft control to display the Silence Alarm Delay sub-menu. Press F2 and note that the second's value now appears in square brackets. Rotating the shaft control will now increment the sample value. Once the required value has been reached it can be fixed by pressing the Enter button. Pressing Cal at any time will return the value to the default of 30 seconds.

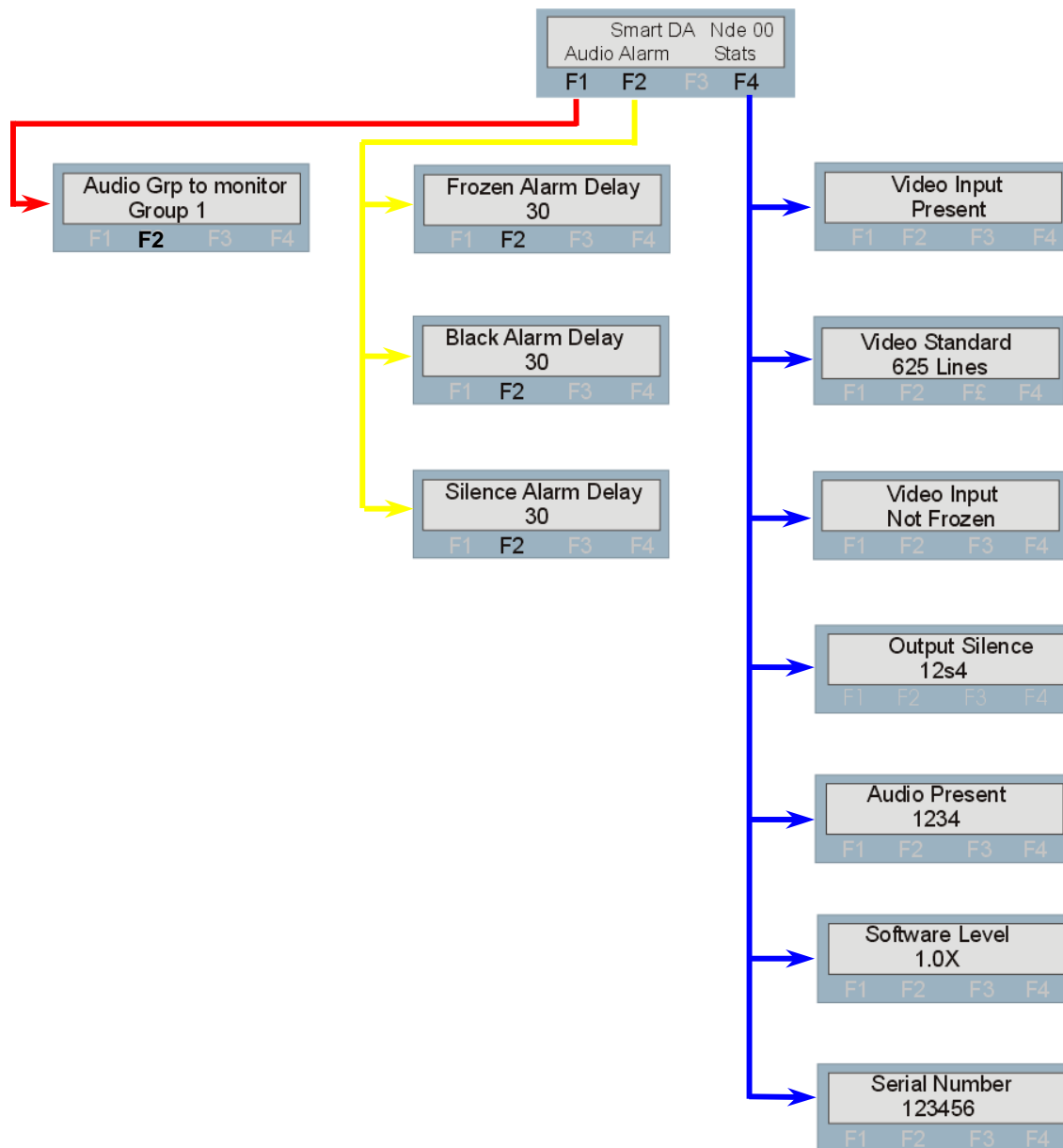
Note. If the value change is not fixed by pressing the Enter button the value will revert to its previous fixed value on exiting from the menu.



Press F2




Smart DA Menu Structure



The Smart DA menu tree


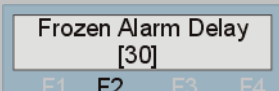
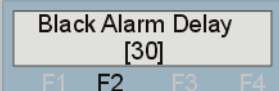
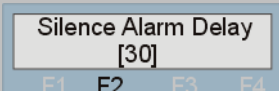
Note: Function key LEDs are illuminated when active.

Selecting audio group

Smart DA audio menu	Description
	<p>To select the group to be monitored, press F2 to activate. Selection is made by rotation of the shaft control. Press Enter to make selection</p>

Configuring alarm delay

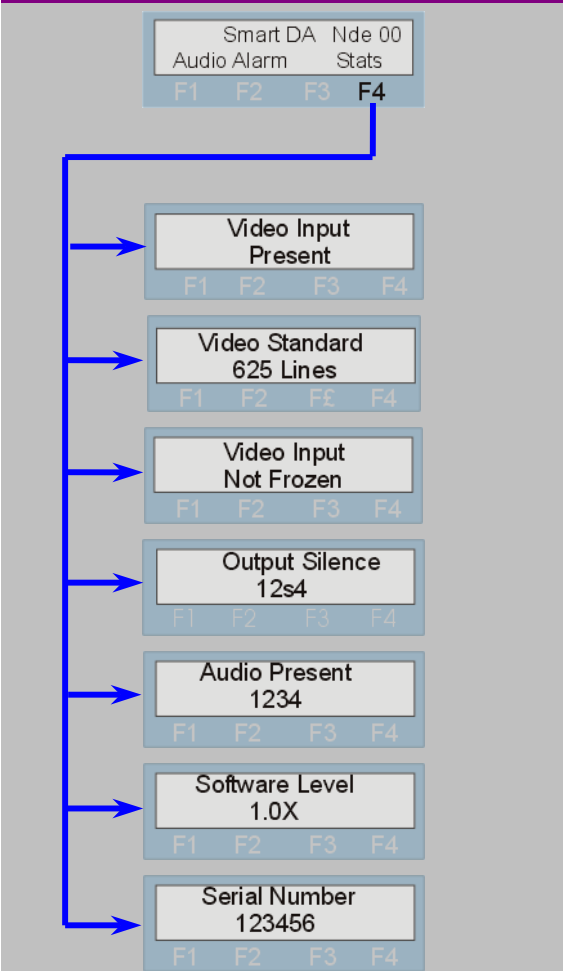
Pressing F2 from the home menu will bring up the Alarm menu. The Alarm menu provides access to the delay settings for frozen picture, picture black and audio silence. Rotate the shaft encoder to select each sub-menu and also change parameters.

Smart DA alarm menu	Description
 <p>The screenshot shows the 'Smart DA alarm menu' with options: Smart DA, Nde 00, Audio Alarm, and Stats. Below these are function keys F1, F2, F3, and F4. A yellow arrow points from F2 to the next menu.</p>	<p>From the Home menu, press F2 to select the alarm menu, which is then traversed by rotating the shaft control.</p>
 <p>The screenshot shows the 'Frozen Alarm Delay' menu with the value [30] and function keys F1, F2, F3, and F4. A yellow arrow points from F2 to the next menu.</p>	<p>Rotate shaft encoder to select the Frozen alarm delay. Press F2 to select to change the value. Rotate shaft encoder to set the new value. Press enter to accept the new value.</p>
 <p>The screenshot shows the 'Black Alarm Delay' menu with the value [30] and function keys F1, F2, F3, and F4. A yellow arrow points from F2 to the next menu.</p>	<p>Rotate shaft encoder to select the Black alarm delay. Press F2 to select to change the value. Rotate shaft encoder to set the new value. Press enter to accept the new value.</p>
 <p>The screenshot shows the 'Silence Alarm Delay' menu with the value [30] and function keys F1, F2, F3, and F4. A yellow arrow points from F2 to the next menu.</p>	<p>Rotate shaft encoder to select the Silence alarm delay. Press F2 to select to change the value. Rotate shaft encoder to set the new value. Press enter to accept the new value.</p>

Delay times are variable in one-second steps from 0 to 240 seconds. Pressing Cal at any time will return the delay to the default value of 30 seconds. If enter is not pressed to accept the changed value the value will revert to the value last saved.

Status

The status menu contains various information about the board and the video input such as standard, audio group, channel status and software level.

Smart DA status menu	Description
 <p>The diagram shows a sequence of menu screens. The first screen is the 'Smart DA' menu with 'Nde 00' and 'Stats' at the top, and 'F1', 'F2', 'F3', and 'F4' at the bottom. A blue line indicates that pressing 'F4' leads to the 'Video Input Present' screen. From there, a vertical blue line on the left indicates that rotating the shaft control moves through the following screens: 'Video Standard 625 Lines', 'Video Input Not Frozen', 'Output Silence 12s4', 'Audio Present 1234', 'Software Level 1.0X', and 'Serial Number 123456'. Each screen has 'F1', 'F2', 'F3', and 'F4' buttons at the bottom.</p>	<p>From the Home menu, press F4 to select the status menu, which is then traversed by rotating the shaft control.</p>
<p>Video Input Present</p>	<p>Rotate the shaft control to view the video input status.</p>
<p>Video Standard 625 Lines</p>	<p>Rotate the shaft control to view the video standard.</p>
<p>Video Input Not Frozen</p>	<p>Rotate the shaft control to view the picture status.</p>
<p>Output Silence 12s4</p>	<p>Rotate the shaft control to view the audio channel status.</p>
<p>Audio Present 1234</p>	<p>Rotate the shaft control to view the audio group status.</p>
<p>Software Level 1.0X</p>	<p>Rotate the shaft control to view the software version.</p>
<p>Serial Number 123456</p>	<p>Rotate the shaft control to view the serial number.</p>

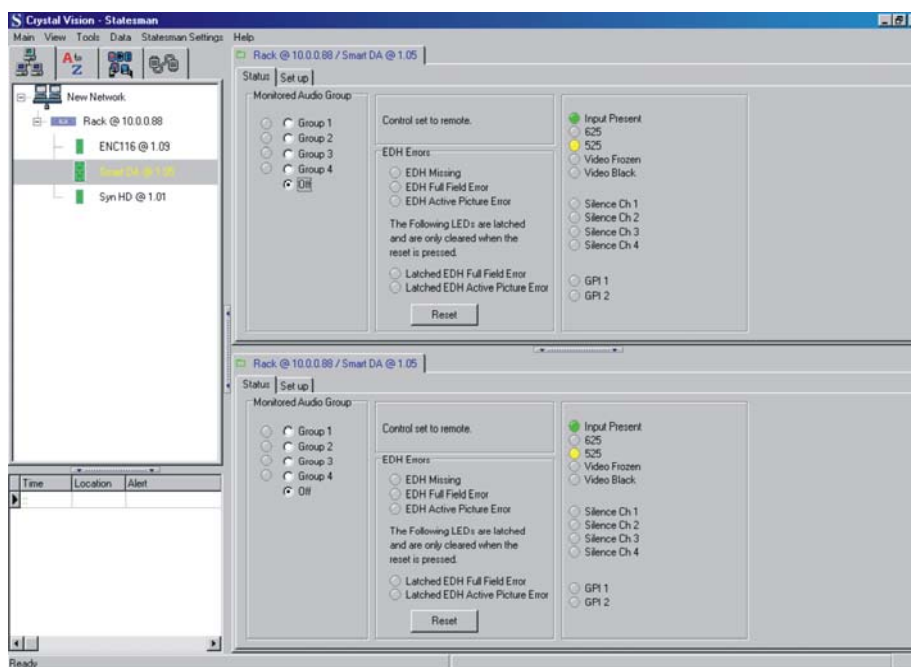
5 Statesman

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 Crystal Vision modules with the benefit of “see-at-a-glance” status monitoring.

The main Statesman application communicates with each module in a frame through an active control panel. An active panel must be fitted to allow for Statesman control.

5.1 Statesman operation

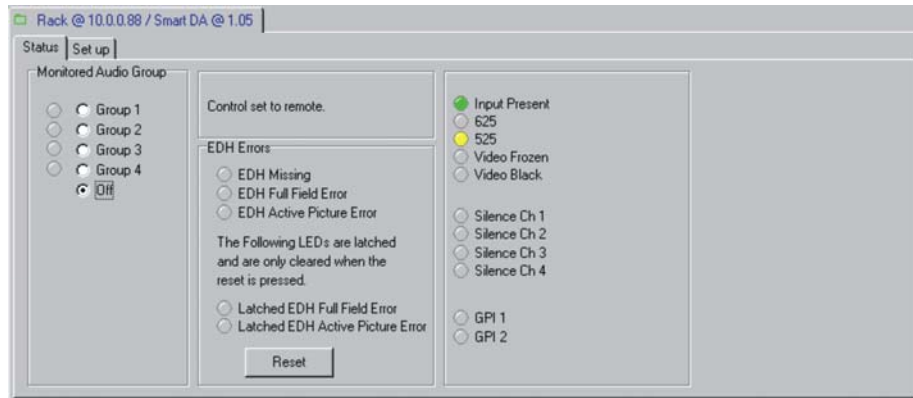
The initial view will show an explorer style view of the connected frames and modules. Double-clicking on a module will enable the display of the main application menus.



The Statesman main application window

The menu display is repeated for convenience to allow dual-control display of modules with duplicate signal paths or to allow two functions to be viewed at the same time.

Smart DA has two Statesman menu tabs: one that provides status information and audio group monitoring selection and a second for assigning the GPI outputs and alarm delays.



Smart DA Status and Configuration menu

The status pane is divided into three group boxes: Audio group selection, EDH status and AV status.

Selecting a monitoring audio group

As well as for picture and data errors in the video, the Smart Switch can also monitor any embedded audio that is present. Selecting the group to be monitored is by checking the group radio button for that group. The available groups for monitoring are shown by a simulated LED beside each group button. Available groups are shown by illuminated LEDs, audio can be monitored for silence and its presence. Should an audio channel remain silent (less than -40 dBu) for more than a few seconds a warning will be given. This warning can set an alarm if required.

EDH status

EDH missing, EDH full field error and active picture error are monitored. Their status is represented by LED indicators that change colour to show condition. EDH full field error and active picture error also have a latched indicator to show if a transitory error has occurred.

Signal status

The Input Present indicator will illuminate green when a valid input is present or red if the input is missing.

The video standard is automatically detected and is shown by a yellow indicator.

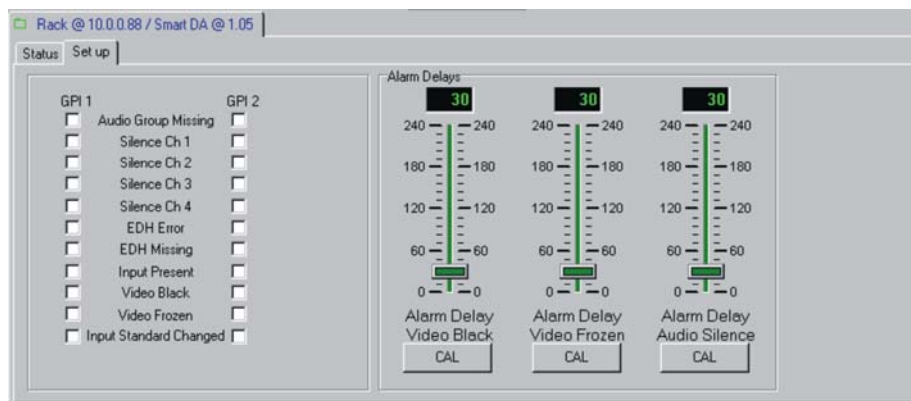
The yellow silence channel LEDs will illuminate to show audio silence on any of the four audio channels.

Indication is also given to show if a GPI output is in a triggered condition.

Further status information is provided by the Statesman logging and alarms feature, which is described in more detail in the Statesman manual.

Set up

Smart DA has two assignable GPI outputs.



Smart DA GPIs menu

GPI1 and GPI2 are assigned by ticking the tick boxes associated with each parameter. Any number of available parameters can be assigned to a single GPI by multiple ticking of tick boxes.

Configuring delay

The three sliders labelled Alarm Delay Video Black, Alarm Delay Video Frozen and Alarm Delay Audio Silence may be adjusted to obtain a delay between 0 and 240 seconds.

The variable assigned is always shown in the top line of the slider display. It is not possible to assign a delay beyond the range indicated by the slider. If a value less than the minimum or greater than the maximum is assigned, the slider will automatically jump to the minimum or maximum value.

Resetting delay

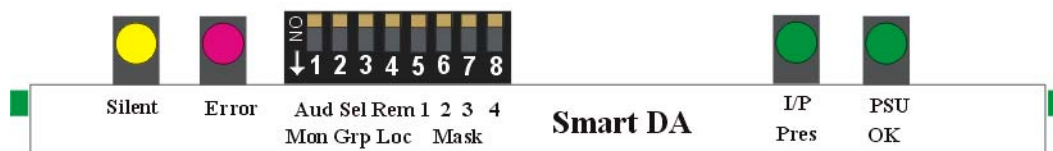
Press the CAL buttons to assign the default delay value (30 seconds) for each associated delay variable.

6 Trouble shooting

Trouble shooting may be performed by using the card edge or remote status panel display.

6.1 Card edge status LEDs

Board edge LEDs provide status reporting and may be useful when fault finding.



The following table summarises the card edge LED functions and colours:

Name	Led Colour	Function when ON
Silence	Yellow	An audio channel has been silent for more than 30 seconds.
Error	Red	One or more error in the video signal has been detected.
Input present	Green	Input video present.
PSU OK	Green	Good power supply (PSU) rails.

Basic fault finding guide

The Power OK LED is not illuminated

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

There is no video output

Check that a valid SDI is present and that any cabling is intact

The video output exhibits jitter

Check that the input signal stability is within normal limits and that the maximum cable length has not been exceeded

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

Check that the card is seated correctly and that the Power OK LED is lit

Check any active control panel cabling

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

If necessary re-set the card by simply removing it from the rack whilst powered and re-inserting it after a few seconds. It is safe to re-insert the card whilst the rack is powered

Check that the remote/local lever is correctly set for the mode of operation.

7 Specification

General

Dimensions	100mm x 266 mm module with DIN 41612 connector
Weight	155g
Power consumption	2 W

Inputs

Video	270Mb/s serial digital to EBU Tech 3267-E and SMPTE-259M Cable equalisation >250m Belden 8281 or equivalent
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Outputs

Number and type:	Eight SDI re-clocked Each will drive >250m Belden 8281 or equivalent
Jitter	Typically 0.2UI, 10Hz

Processing

Video	Picture and EDH status
Audio	Four channel de-embedder assignable to any single audio group
GPIs	Two output alarms are available: In local mode they default to SDI input present and the other as picture frozen or black. In remote mode both GPI alarms are user configurable

Status and monitoring

Card edge visual monitoring, with LED indicators to indicate:
PSU rail present, input present, audio channel silence and error.
Active control panel and Statesman control.

Ordering information

Smart DA SDI DA with signal status monitoring and alarms, 5 x SDI (RM01) or 8 x SDI (RM02 and RM18)

Rear Connectors

RM01 Single height rear connector
 RM02 Quad height rear connector
 RM18 Double height rear connector

Frames

Indigo 4 4U frame with passive front panel for up to 24 modules
 Indigo 2 2U frame with passive front panel for up to 12 modules
 Indigo 1 1U frame with passive front panel for up to six modules
 Indigo DT Desk top box with passive front panel for up to two modules
 Indigo 2A 2U frame, Statesman enabled with active control panel for up 12 modules
 Indigo 1A 1U frame, Statesman enabled with active control panel for up six modules
 Indigo DTA Desk top box, Statesman enabled with active control panel for up two modules
 Indigo 4S 4U frame with passive front panel fitted with Statesman CPU for up to 24 modules
 Indigo 2S 2U frame with passive front panel fitted with Statesman CPU for up to 12 modules
 Indigo 1S 1U frame with passive front panel fitted with Statesman CPU for up to six modules
 Indigo DTS Desk top box with passive front panel fitted with Statesman CPU for up to two 2 modules
 Indigo 2AE 2U frame, Ethernet enabled with active control panel for up 12 modules
 Indigo 1AE 1U frame, Ethernet enabled with active control panel for up six modules
 Indigo DTAE Desk top box, Ethernet enabled with active control panel for up two modules
 Indigo 4SE 4U Ethernet capable frame with passive front panel fitted with Statesman CPU for up to 24 modules
 Indigo 2SE 2U Ethernet capable frame with passive front panel fitted with Statesman CPU for up to 12 modules
 Indigo 1SE 1U Ethernet capable frame with passive front panel fitted with Statesman CPU for up to six modules
 Indigo DTSE Ethernet capable desk top box with passive front panel fitted with Statesman CPU for up to two 2 modules
 Indigo 2-48V 48V 2U frame with passive front panel for up to 12 modules
 Indigo 1-48V 48V 1U frame with passive front panel for up to six modules
 Indigo 2A-48V 48V 2U frame, Statesman enabled, with active control panel for up 12 modules
 Indigo 1A-48V 48V 1U frame, Statesman enabled, with active control panel for up six modules
 Indigo 2S-48V 48V 2U frame with passive front panel fitted with Statesman CPU for up to 12 modules

Indigo 1S-48V	48V 1U frame with passive front panel fitted with Statesman CPU for up to six modules
Indigo 2AE-48V	48V 2U Ethernet capable frame, Statesman enabled, with active control panel for up to 12 modules
Indigo 1AE-48V	48V 1U Ethernet capable frame, Statesman enabled, with active control panel for up to six modules
Indigo 2SE-48V	48V 2U Ethernet capable frame with passive front panel fitted with Statesman CPU for up to 12 modules
Indigo 1SE-48V	48V 1U Ethernet capable frame with passive front panel fitted with Statesman CPU for up to six modules