MultiLogo

HD/SD logo keyer

# USER MANUAL

Crystal Vision

Contents

1 Introduction

MultiLogo is a sophisticated modular logo keyer that provides three layers of keying from a variety of internal and external sources. Its multi-port non-volatile video store can read six images and write two images simultaneously. There are two versions of MultiLogo available, the MultiLogo V130 with a single HD/SD video input and the MultiLogo V430 that has four HD/SD video inputs.

MultiLogo can be used either with graphics that have a separate key signal or with self-keyed graphics. Both additive and multiplicative keying is available. Three layer keying allows three still or animated graphics to be independently brought up either from the video store or from external sources. The first external video source is normally dedicated to the main programme because of its relay bypass protection while the other three external feeds (MultiLogo V430 only) are completely flexible and configurable. Typically these inputs could be used for such things as a back-up feed or character generator for an emergency message and its key signal. It is also possible to grab a logo from a live video feed.

MultiLogo runs the uCLinux operating system for sophisticated file handling and stability and with on-board industry standard protocols allowing it to be used with studio automation systems. Alternately, using a PC running Crystal Vision's own drag and drop software will auto-convert images of most common file formats required by the MultiLogo and transfer them over 100MB Ethernet directly onto the board via its dedicated rear module RJ45 Ethernet connection.

MultiLogo is designed for branding HD or SD stations but for people who just need one station ident the V430 can be used as a dual channel device – sharing the three keyers between two channels. Both versions share a look-ahead preview facility, which has the benefit of allowing sophisticated transitions to be previewed before committing to the main output.
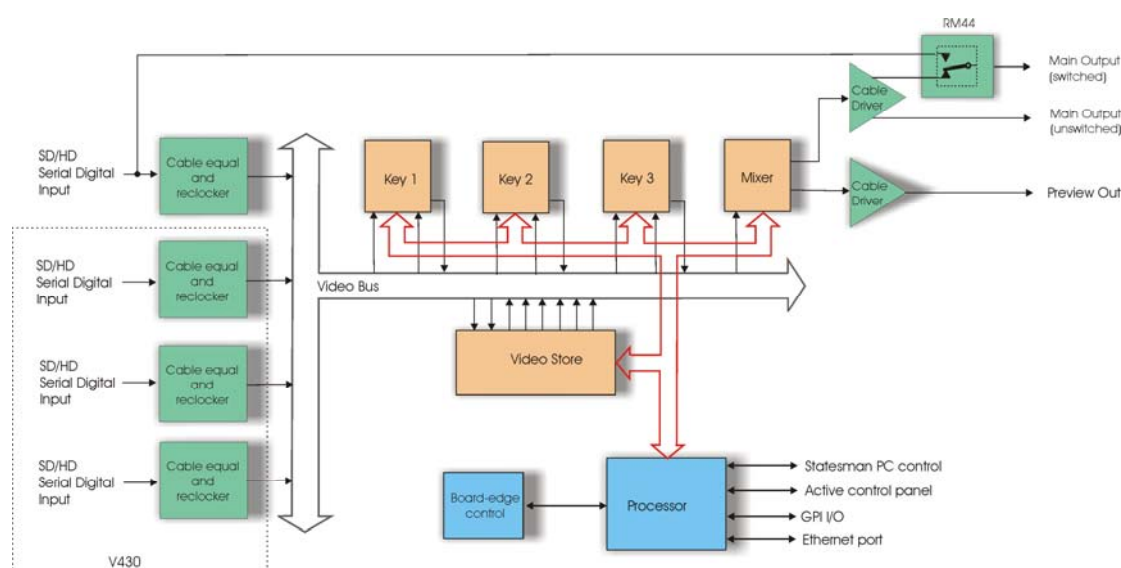
MultiLogo

MultiLogo's main features are:

- Modular logo keyer, available in two versions
- Three layers of keying
- Eight-port video store with DRAM and Flash memory
- Graphics can have separate key signal or be self-keyed
- Additive and multiplicative keying
- Up to four configurable external inputs for live video (MultiLogo V430)
- Drag and drop PC software for auto conversion of graphics from any format
- Fast transfer of graphics from PC to board over 100 MB Ethernet
- Look-ahead preview
- Industry standard software protocols help use with automation systems
- Can be used as a dual channel logo keyer where one layer of keying is required (MultiLogo V430)
- Relay bypass protection of main input (RM52)

MultiLogo is a 100mm x 266mm module, which fits in the four standard frames and can be integrated with any boards from the company's full product range. MultiLogo V130 is a single height module and can be used with either the RM44 or RM52 rear module, both of which include relay bypass protection of the input in the event of power failure or board malfunction or removal. The MultiLogo V430 is a 'double decker' module and requires an RM34 rear connector in its upper position in combination with either the RM44 or RM52 rear module in the lower position.

1.1 Operating modes

Input and output video standards

The MultiLogo will automatically switch between SD-SDI and HD-SDI inputs. The output timing is locked to the input. (Input 1on the lower rear module RM52 of a MultiLogo V430).

Note: All inputs of the MultiLogo V430 must be of the same standard and co-timed to within one line.

If the MultiLogo is powered without an input it will default to outputting 1080i 50. To change the output to 1080i/720p 59.94 momentarily, apply a 1080i/720p 59.94 input to Input 1 so that the MultiLogo can relock.

Should graphics have been copied into the RAM/Flash with an HD-SDI input connected those graphics will no longer be valid if the input is changed to SD-SDI as the graphics resolution will have been determined by its input standard.

Note: MultiLogo's memory store can contain graphics of all supported video standards but they will only be valid in their native standard.

2 Hardware installation

The MultiLogo V130 single height module uses either the RM44 or RM52 rear connector that will fit into all Crystal Vision rack frames. The MultiLogo V430 is a 'double decker' module that uses either an RM52 plus RM34 or RM44 plus RM34 rear module. The MultiLogo V430 takes up two frame slots. All modules can be plugged in and removed while the frame is powered without damage.

2.1 Module configuration

The MultiLogo V130
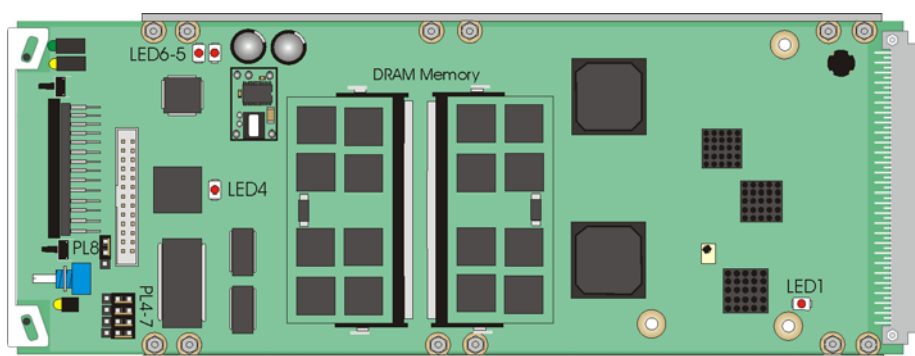
MultiLogoV130

The MultiLogo V430

MultiLogoV430
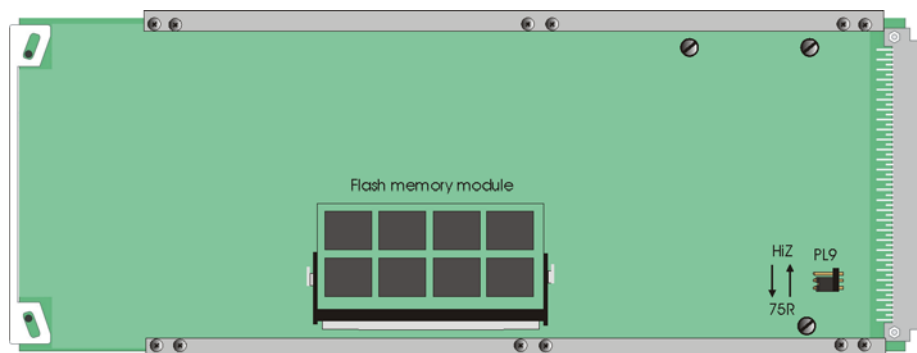
MultiLogoV130/430 underside showing the flash memory module fitted

Link configuration and LEDs

There are six jumper links and four surface-mounted LEDs on the MultiLogo motherboard. The surface-mounted LEDs are not visible from the front of the frame and are included for diagnostic purposes only.

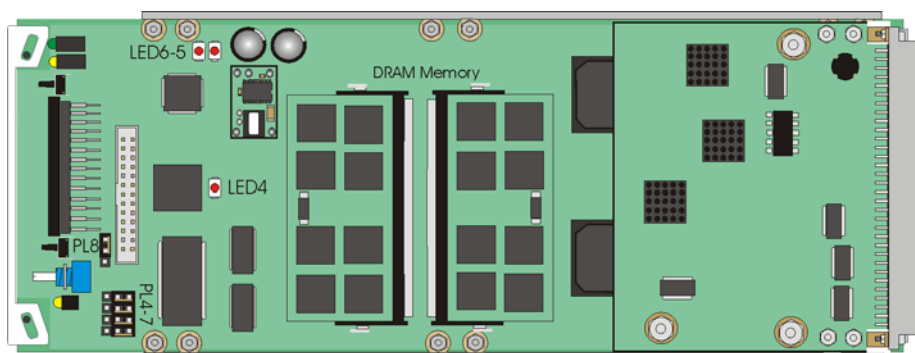|	Comment
PL4, PL5, PL6, PL7	GPI/RS422 comms.
	GP1 pins 2-3 (right position). RS422 pins 1-2 (left position).
	Factory set for GPI
PL8	1-2 selected IP address. 2-3 forced IP address 10-0-0-201
PL9 (under side)	Not applicable
LED1	Input present
LED4	CPU configuration in progress
LED5	Ethernet Data
LED6	Ethernet Link

2.2 Rear modules and signal I/O

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

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

Rear module connections with RM44

The RM44 is a single height module that is used for the MultiLogo V130 and as the lower rear connector for the MultiLogo V430.

RM44 rear module connector	Description
	RM44 • 24 MultiLogo V130 modules per Indigo 4 frame • 12 per Indigo 2 frame • Six per Indigo 1 frame • Two per Indigo DT • All frame slots can be used

BNC	I/O assignment
Ethernet connector	Ethernet control from PC
PREVIEW	Preview output
MAIN OUT2 (Unswitched)	Serial digital output with no relay bypass
MAIN OUT1 (Switched)	Serial digital output with relay bypass
HD/SD IN	High Definition/Standard Definition serial digital input

Rear module connections with RM52

The RM52 is a single height module that is used for the MultiLogo V130 and as the lower rear connector for the MultiLogo V430.

RM52 rear module connector	Description
	RM52 • 24 MultiLogo V130 modules per Indigo 4 frame • 12 per Indigo 2 frame • Six per Indigo 1 frame • Two per Indigo DT • All frame slots can be used

BNC	I/O assignment
Ethernet connector	Ethernet control from PC
Ethernet connector	RS422 control from control panel
PREVIEW	Preview output
MAIN OUT2 (Unswitched)	Serial digital output with no relay bypass
MAIN OUT1 (Switched)	Serial digital output with relay bypass
HD/SD IN	High Definition/Standard Definition serial digital input

Rear module connections with RM34

The RM34 is a single height module that is used as the upper rear connector for the MultiLogo V430.

RM34 rear module connector	Description
	RM34 • 12 MultiLogo V430 modules per Indigo 4 frame • Six per Indigo 2 frame • Three per Indigo 1 frame • One per Indigo DT • Alternate frame slots can be used

BNC	I/O assignment
AES OUT 1	Not currently supported
AES OUT 2	Not currently supported
AES INPUT	Not currently supported
HD/SD IN D	Configurable High Definition/Standard Definition serial digital input
HD/SD IN C	Configurable High Definition/Standard Definition serial digital input
HD/SD IN B	Configurable High Definition/Standard Definition serial digital input

2.3   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.

Note: For MultiLogo V430 the GPI's connect to the lower slot position. E.g. if the MultiLogo V430 was located in slot positions 1 and 2 you would wire to slot 2.

GPI			Low (<1V)	High (+5V)
0	'a'	Recall preset bit 1	The seven user preset configurations can be recalled using binary notation	
1	'b'	Recall preset bit 2		
2	'c'	Recall preset bit 4		
3	'd'	Mix (auto)	On transitions toggles the programme and preview control at a rate set by the rate control	
4	'e'	Not used		
5	'f'	No connection		

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.

The recall presets with GPI control must be enabled from the user controls, i.e. card edge, active front panel or Statesman PC control system.

Using MultiLogo GPIs

There are a total of 225 presets available on the MultiLogo but it is only possible to call the first seven using the GPI inputs. The following table shows the binary weighted code required to recall presets 1 to 7.

A '0' is an open GPI input and a '1' is a grounded GPI input. The GPIs are momentary i.e. a pulse to ground is required to action a change rather than a latch to ground.

GPI input connections have 10kΩ pull-up resistors to the internal chassis +5V.

Recall Preset	No change	1	2	3	4	5	6	7
GPI 'a'	0	1	0	1	0	1	0	1
GPI 'b'	0	0	1	1	0	0	1	1
GPI 'c'	0	0	0	0	1	1	1	1

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
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	Upper	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
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	Lower	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.

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.

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

The +5V output is protected by self-resetting thermal fuses, which limit the total output current available from Remotes 1-2 to approximately 1A.

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

The +5V output is protected by self-resetting thermal fuses, which limit the total output current available from Remotes 1-2 to approximately 1A.

Example connections: If a MultiLogo V430 was located in slot position 1 & 2 the GPIs should be wired to slot position 2 (the main board). The preset recall GPIs are 'a', 'b' and 'c' so by referring to the table above we can see pins 7, 16 and 17 on the Remote 1 frame D-Type will need pulling to ground to action preset recalls.

3 PC control

The MultiLogo is shipped with Crystal Vision's own drag and drop software that allows easy board control and files conversion.

3.1 Installing MultiLogo software

MultiLogo - Setting IP Address

The unit is shipped using the following IP address 10.0.0.201. To set it to the IP of your choice, in your web browser enter the address http://10.0.0.201/

N.B. You will need to set your PC on the same IP address and subnet mask range.
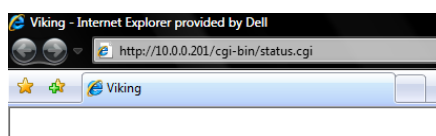
Once the status page is displayed, click on the 'Network' button. In the IP address field enter the IP address you wish, along with the appropriate subnet mask and default gateway.

Once the information has been entered click store. You will then need to reboot the card to complete the update.
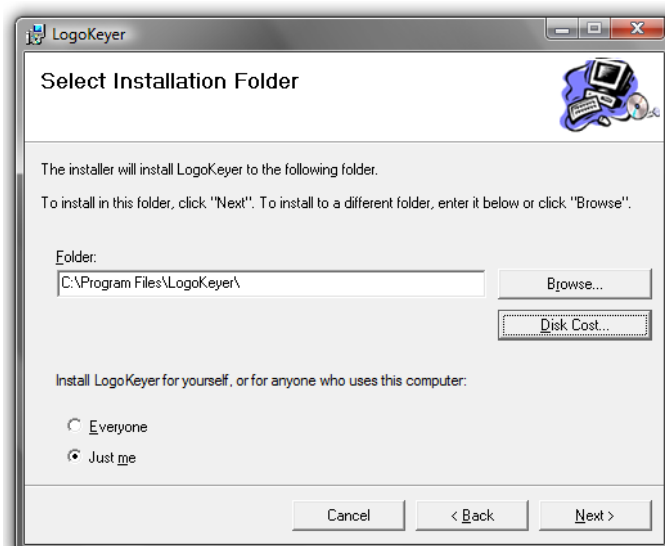
Installing Operating Software
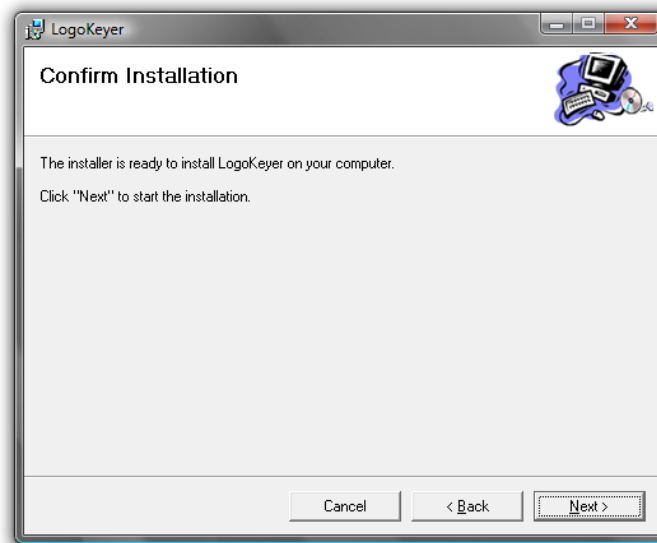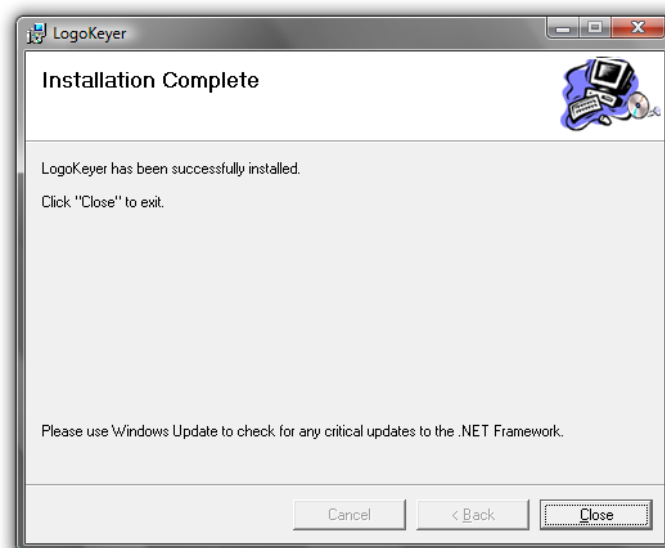
Run the 'Setup.exe'

Click 'Next'

To continue with the default options click 'Next', otherwise change the options to suite your needs.

Click 'Next' to start the installation process.

Once the installer has completed click 'Close'

Pointing the LogoKeyer Software at the boards

Upon installation a shortcut is placed on the desktop called LogoKeyer. This shortcut needs to be pointed at the board's IP address in order to communicate. To do this:

1. Right click on the shortcut and select 'Properties'

2. After the text "C:\Program Files\LogoKeyer\Release\LogoKeyer.exe" in the target field, enter a space followed by the IP address of the board you wish to control.

3. Click 'Apply' then 'OK'

To run the software simply double-click on the icon.

If you have more than one board in your system you can create multiple icons to control multiple boards. To do so copy the shortcut and follow the instructions above but replace the IP address for the board you wish to control.

Uploading Files into RAM and Flash Storage

You can upload still and moving images on to both the Flash and RAM storage.

1. Open the LogoKeyer software

2. From within the store tab, browse in the top left hand pane to the folder that contains the images you wish to upload.
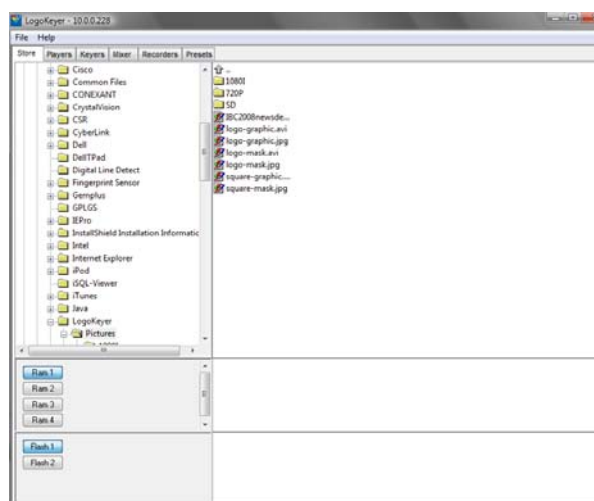
To upload the image simply drag and drop it into either the bottom right-hand window for the Flash storage or the second from bottom right-hand window for the RAM storage.

Note: On reboot of the card any data saved in RAM will be lost. Any data in Flash will copy itself from Flash into RAM

Assigning RAM and Flash files to Keyers

1. Click on the store you wish to assign an image to (either RAM 1, 2, 3 or 4 or Flash 1 or 2).

2. Double click the image you wish to assign to the appropriate store.

Viewing the Cards RAM and Flash sources

Once you have assigned the RAM and Flash stores images you can then assign these to the keys.
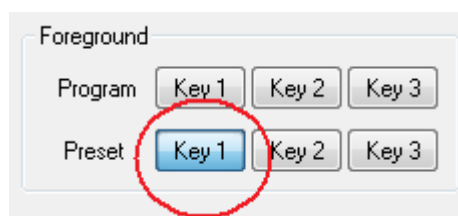
1. Click on the 'Mixer' tab. The mixer tab allows you to switch between multiple sources.
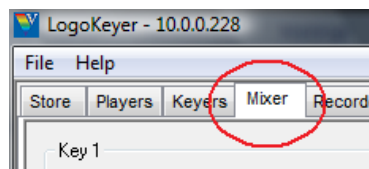
2. Click on the appropriate source under the key you are creating. If it is from the RAM or Flash source the file name is displayed on the right.

3. You then select this key to be displayed on the foreground for the Program or the Preset by toggling the appropriate button.

Setting the Key gains

The Keyers tab allows you to set the gain and mode for each of the three Keyers.

The Key modes consist of Self Key, Split Key and Full Key.

Self key doesn't use a key signal. It uses the luminosity in the fill signal to generate the key information.

Split key uses both the fill and key signal to generate the key.

Full key doesn't use a key signal but internally generates a full frame peak white signal to force the key.

Positioning the Graphics from the Memory Stores

The Players tab allows you to change the on-screen position of the graphics from the RAM and Flash memory stores.

If two adjacent stores are outputting the Fill and Key signal e.g. RAM 1 = Fill & RAM 2 = Key then the stores should be locked together when changing the position e.g. lock the position of RAM 2 to RAM 1 using the "Lock to 1" control.

The Animation controls within the Players tab provides control of how to play out the graphic from the memory stores e.g. play the file once, play the file on a continuous loop.

Recording from external video inputs

The MultiLogo can record fill and key signals from external video inputs using the Recorders tab. N.B. Recording from inputs 2, 3 and 4 is only available on the MultiLogo V430.

You can configure the recorder to record the fill only, key only or fill & key using the "Source" box to select which inputs you want to use as the fill and key. The number of frames you wish to record should be entered in the "Frames" box pressing enter after setting your value.

Saving and Recalling presets

Up to seven presets can be stored allowing recall from the MultiLogo Control Software or GPI. The presets store the current state of the MultiLogo including what files have been assigned to the RAM and Flash memory, the position of the keys and the key gain settings.

The "Save Power On" control allows you to save the state of the MultiLogo after power up. This can then be recalled using the "Recall Power On" control, useful if you want to get back to the power on state.

3.2 Image converter

When installing the LogoKeyer GUI a program called Image Converter is also installed. This program will convert image sequences to the native file format required by the MultiLogo. It can also be used to extract the alpha channel from file formats that support it. During installation an Image Converter icon will have been placed on your desktop.

Using the image converter

Launch the image converter software by either using the desktop icon or from the MultiLogo control software file menu. Once the image converter window has opened, the required files for conversion can be displayed by pointing the browser at the folder containing the image files.
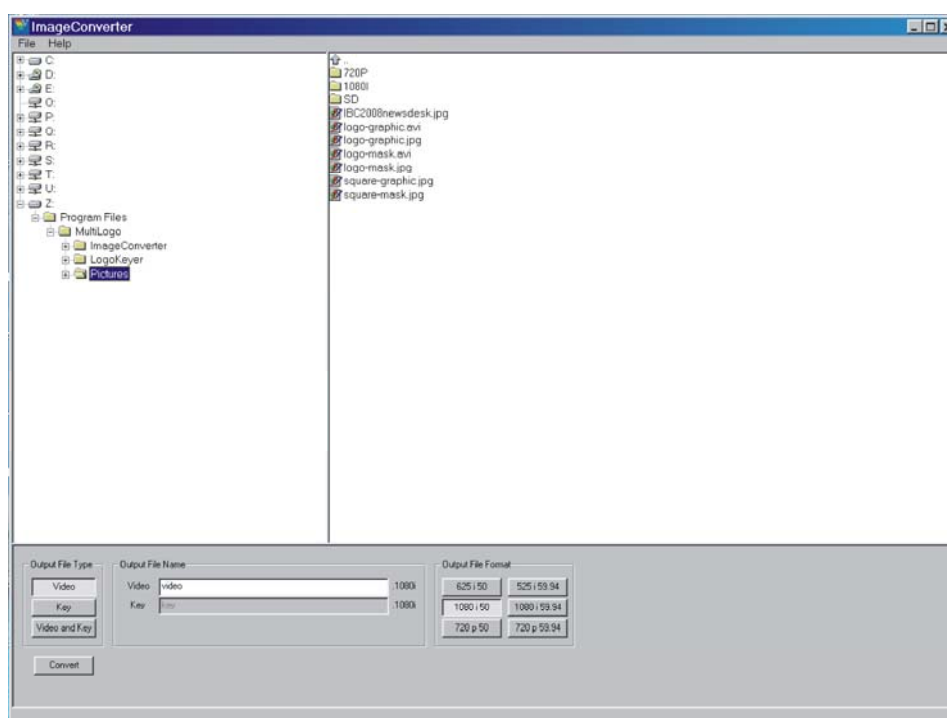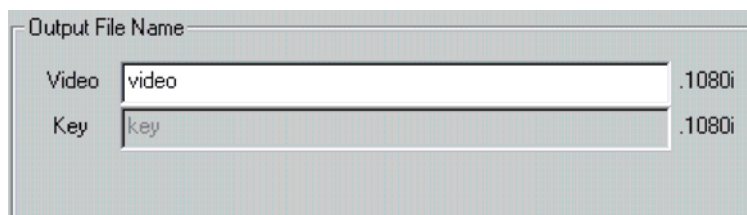

Image converter main screen

To make the necessary conversion, highlight the selected file. You are then required to select the proposed output file type from the three available types. These are; Video, Key and Video and Key.

Output File types

- Video - This option is selected if the file to be converted contains the background or fill in the colour channels.

- Key – This option is selected if the file to be converted contains the key in the alpha channel.

- Video and Key - This option is selected if the file to be converted contains the fill in the colour channels and the key in the alpha channel. The conversion automatically extracts these channels and creates separate files for the video and key.

The next step is to choose a file name for the output file. This step is optional as default names will be used depending on the output file type previously selected. These will be video and or key.
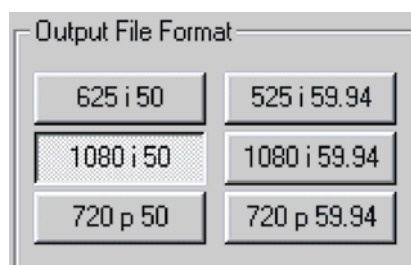

Note: If an individual name is not applied any previous file of the same default name will be overwritten.

Output file format

Once the file type and name has been input the format must be selected.

These six options are;

625i50, 720p50, 1080i50, 525i59.94, 720p59.94 and 1080i59.94

Once all selections have been made click on 'Convert' to begin the conversion process. Upon completion a file will output using the naming that you have stipulated followed by the output format that you have selected, e.g. video.1080i. This can then be transferred to the MultiLogo card via the MultiLogo control software.

Multiple image conversion

If converting multiple images into a single file you will need to highlight the entire selection:
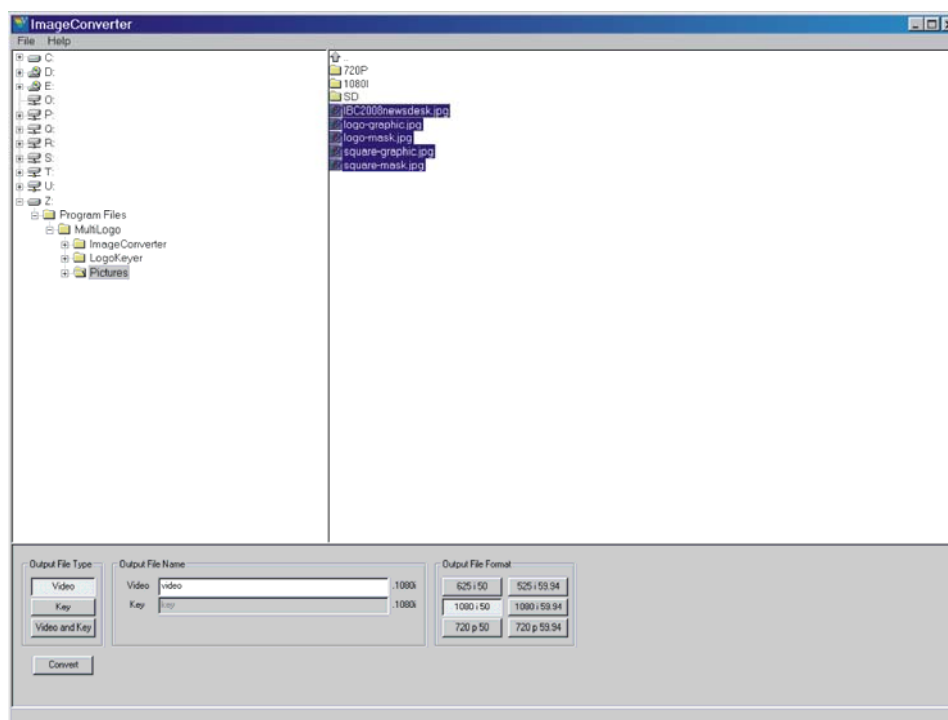
3.3 Updating MultiLogo software

On occasion new software may be released to add new features or enhance performance. All upgrades to the MultiLogo board will be carried out from a PC connected to the Ethernet connector situated on the frame rear module connected to the MultiLogo board.

Upgrading the MultiLogo board software

Note: Before you upgrade your board you should note that during the upgrade process all items stored in the flash and RAM will be over-written. It is strongly recommended that you backup copies of all items stored on your board to your PC and note their assignment to the stores on the board.

Note: If upgrading from software version v1.0 it will be necessary to change the installation directory from c:\program files\logokeyer to c:\program files\MultiLogo as anything previously stored there after installation will not be copied across into the new 'MultiLogo' directory.

Save the Crystal Vision Flash Server software (flash_server.exe) to your desktop. It may also be wise to save the binary file (merged.bin) to the same location to make it easy to retrieve.

Launch the Flash Upgrade software.

Click on the button 'Select a file from your PC to flash frame with'
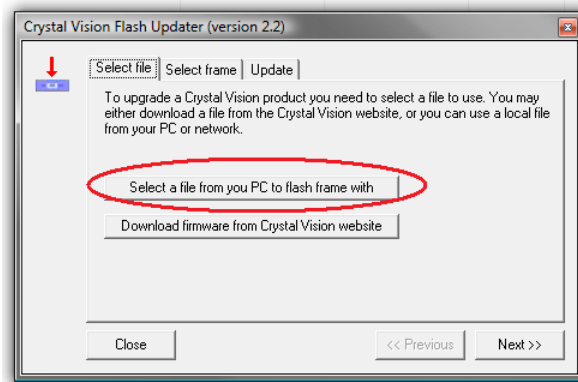
From the window that pops-up browse to the location where you have saved the MultiLogo card software file (merged.bin) and open it
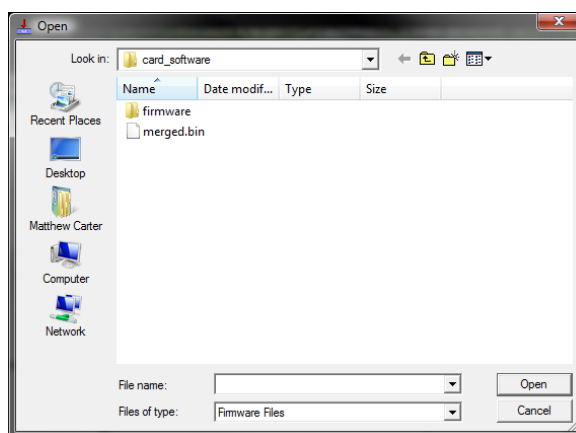
Click '*Next*'

You now need to enter into the box '*IP address of frame to be updated*' the IP address of the card to upgrade (10.0.0.227) and click '*Next*'

The software is now ready to upgrade but double check that you are looking at the correct IP address by noting the number after the text '*The address of the frame is...*' To initiate the upgrade process click '*Next*'

Once the upgrade has finished you should receive a message reading '*The frame software has been successfully updated, you now need to restart the frame*' To do this simply unplug the board and reseat it. If it comes back as a failure DO NOT quit the program simply click '*Previous*' then '*Next*' to re-initiate the upgrade.

Once the board has been upgraded you can copy back over the files needed. If you assign them back to the same storage spaces (Flash 1, Flash 2, Ram 1 etc) all your previously presets and player should be as before the software upgrade.

Updating MultiLogo PC software

It is first necessary to uninstall your current version of MultiLogo software. To do this open your control panel and remove using the 'add and remove programs' facility.

To install the new software insert the disc and run the 'setup.exe' and follow the instruction as they appear.

To continue with the default options click 'Next', otherwise change the options to suit your needs.
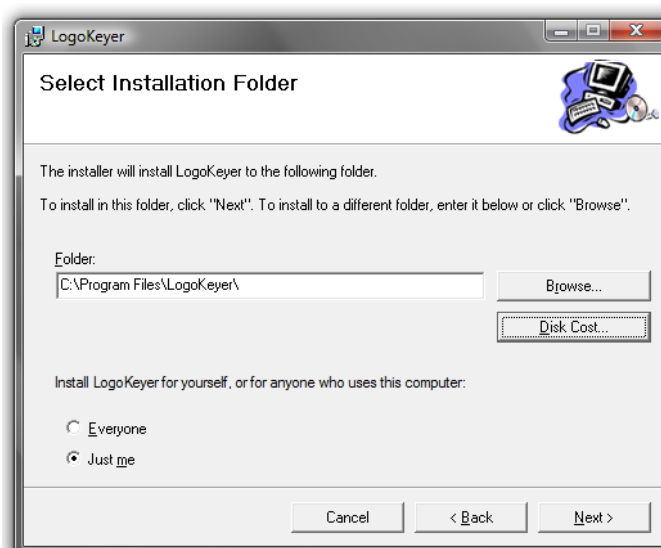
Click 'Next' to start the installation process.

Once the installer has completed click 'Close'
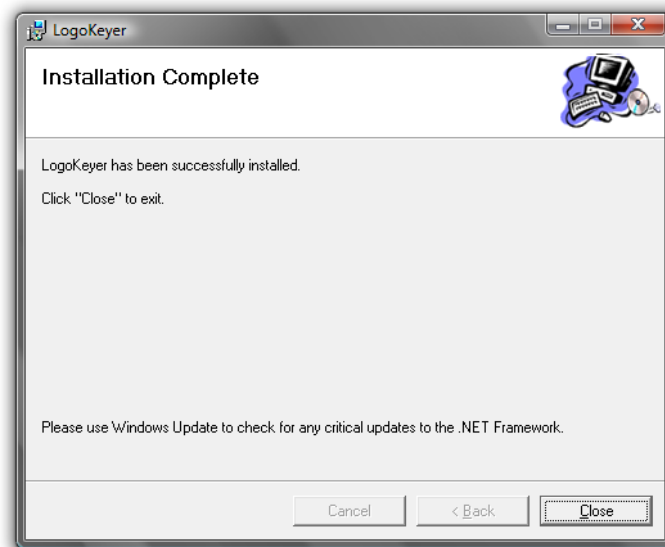
Pointing the MultiLogo Software at the boards

Upon installation a shortcut is placed on the desktop called LogoKeyer. This shortcut needs to be pointed at the board's IP address in order to communicate. To do this:

1. Right click on the shortcut and select 'Properties'

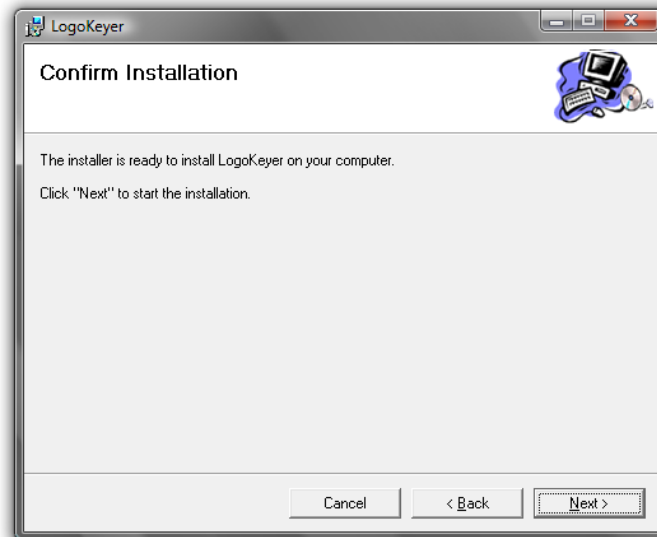2. After the text "C:\Program Files\LogoKeyer\Release\LogoKeyer.exe" in the target field, enter a space followed by the IP address of the board you wish to control.

3. Click 'Apply' then 'OK'

To run the software simply double-click on the icon.

If you have more than one board in your system you can create multiple icons to control multiple boards. To do so copy the shortcut and follow the instructions above but replace the IP address for the board you wish to control.

4 Card edge operation

Once the start-up initialisation procedure is complete, the MultiLogo card status can be interrogated from the card edge.

The front edge of the card provides power rail and input status monitoring by LEDs and a ten-digit visual status display.

4.1 Card edge switch settings

The two tactile push button switches allow the operator to navigate within the menu structure.

Button	Function	Normal state Up, Action Down
▭	Up Menu	Push to jump up a menu level or cancel a selection.
ENTER	Select/Action	Push to select a menu and to action and confirm a change.

4.2 Card edge rotary controls

The board edge rotary encoder is used to navigate through the menu categories and adjust parameter values.

Control	Function
SCROLL /ADJUST	Rotate SCROLL to identify a menu category. In combination with the ENTER button select and ADJUST to change the current level or select a further option.

Note: The rotary control can access menus and parameter values by clockwise or anti-clockwise rotation.

4.1 Reading card edge LEDs

Card edge LEDs may be used in conjunction with status information from any connected remote status panel display or from Statesman if available.

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	Function when Off
HD	Yellow	Video input standard is HD (High Definition)	Input not present
SD	Yellow	Video input standard is SD (Standard Definition)	Input not present
PSU	Green	Good power supply (PSU) rails.	One or more of the monitor supplies is out of specification
	Yellow		No current function
	Yellow		No current function
	Yellow		No current function

4.2 Navigating card edge menus

To access the card edge menu system proceed as follows:

- Press the up-arrow [⟳] until a top menu category is reached
- Rotate the SCROLL control until the desired menu category is found
- Press ENTER to enter the sub menus of that category
- Rotate SCROLL to select a sub menu
- Press ENTER to select the desired function. Selection will be indicated by the text being displayed in *italic* text
- Rotate ADJUST to make the desired change to the selected parameter. The display brightness will flash slowly to indicate that a change has been made and requires confirmation
- Press ENTER to action the change. The display will cease flashing
- Use the up-arrow [⟳] and SCROLL control to navigate to further menus

Note: The displayed menu brightness will flash slowly if confirmation of a change is required.

Menu tree
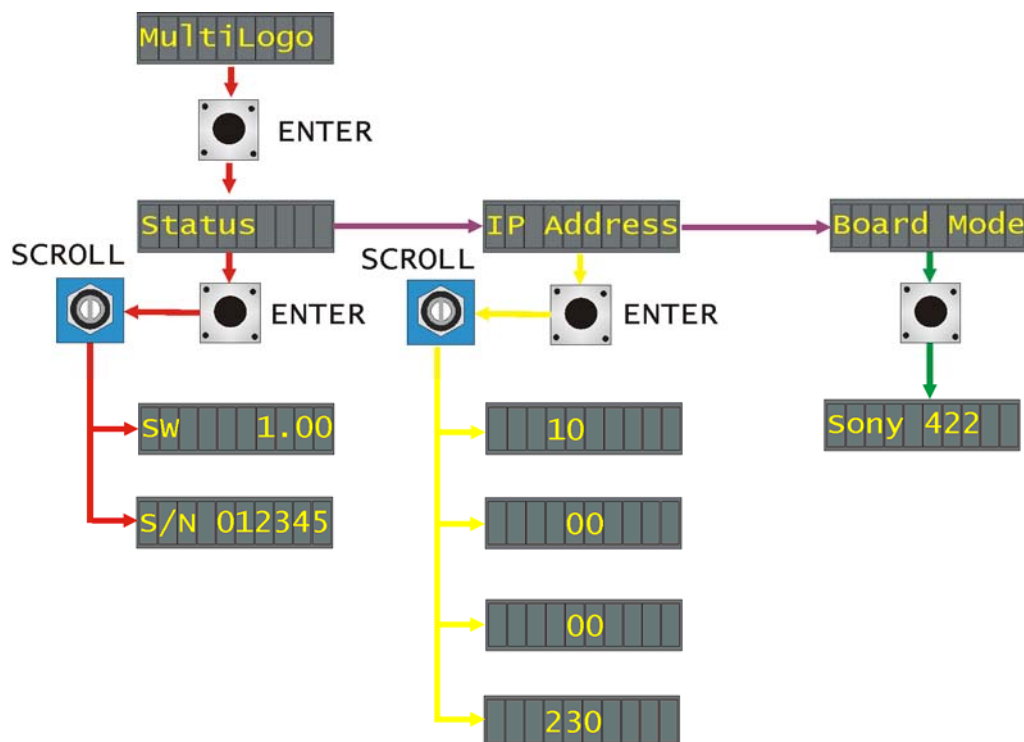
MultiLogo Board edge menu structure

Tip: To reach the top menu (Status) push the ⟷ button repeatedly until reached.

Status menu

From the STATUS top menu press ENTER then SCROLL to access the status menu options.

Status	Menu	Comment
Sw 1.00	PCB serial number	Rotate Scroll/Adj. to show the electronically stored PCB serial number. This should correspond with the serial number label affixed to the PCB connector.
S/N 012345	Software version fitted	Rotate Scroll/Adj. to show the version number of the currently installed software.

IP Address

From the IP address top menu press ENTER then SCROLL to access the IP address that the MultiLogo is currently set to.

IP Address	Menu	Comment
10	IP address 1st digits	Rotate Scroll/Adj. to show the stored IP address. This will show the 1st three digits in the IP address. **_10_**_.0.0.230_
00	IP address 2nd digits	Rotate Scroll/Adj. to show the stored IP address. This will show the 2nd three digits in the IP address. _010.**0**.0.230_
00	IP address 3rd digits	Rotate Scroll/Adj. to show the stored IP address. This will show the 1st three digits in the IP address. _010.0.**0**.230_
230	IP address last digits	Rotate Scroll/Adj. to show the stored IP address. This will show the 1st three digits in the IP address. _10.0.0.**230**_

Board Mode

From the board mode top menu press ENTER to access the second serial port comms mode setting.

Board Mode	Menu	Comment
Sony 422	2nd serial port comms mode setting	Rotate Scroll/Adj. to show the 2nd serial port comms mode setting. **_Sony 422, Statesman, VDCP 422._**

5 Using the front control panel

5.1 Module selected

This operational guide assumes that the panel has been set up according to the panel setup procedure described in the Crystal Vision Control 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 all eight control panel keys LEDs will illuminate briefly. Once the panel has completed its power up and configuration sequence the panel will enter Statesman mode and the massage 'Press Cal to Exit' will be displayed.

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

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

Selecting a MultiLogo

To select a particular card in a frame, press the DEVICE key to go to the Device menu.

Note: There may be a delay whilst the frame is interrogated during which time the 'No cards Found' could be displayed.

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 1.

When the desired card is selected press the ENTER key to access that card's HOME menu. The message shows that a MultiLogo has been selected.
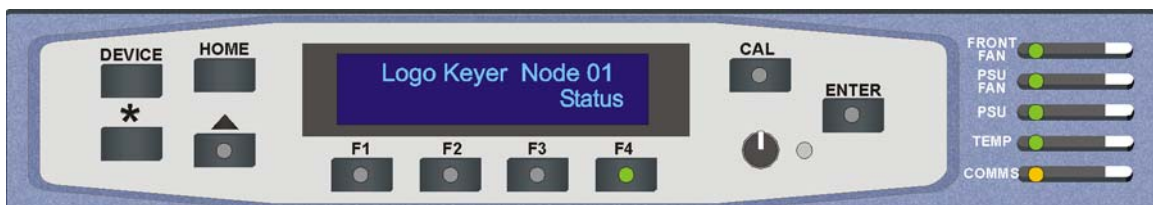
The MultiLogo home menu

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.

5.2 The MultiLogo 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 MultiLogo has only one menu which is the Status menu. This can be reached by pressing the F4 key.

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. If the variable updates in real time it will be contained within square brackets [letter box] or if the change needs to be accepted angular brackets will be used <CVBS>. Pressing Enter will fix the new value.

The following chart shows the available MultiLogo menu. The actual menu available may vary slightly as software is updated.
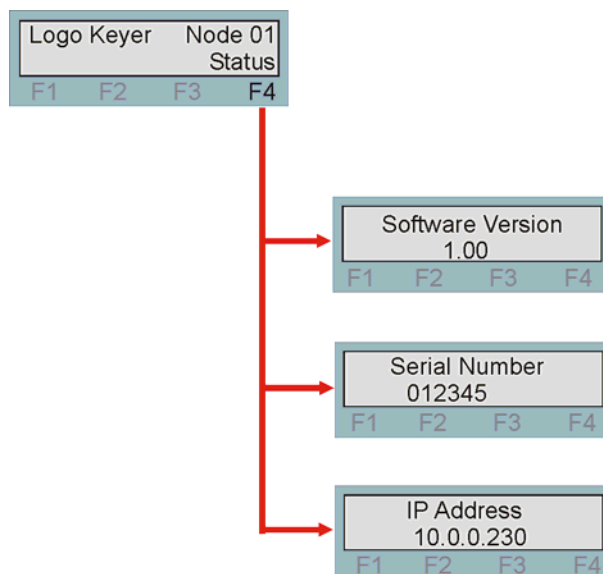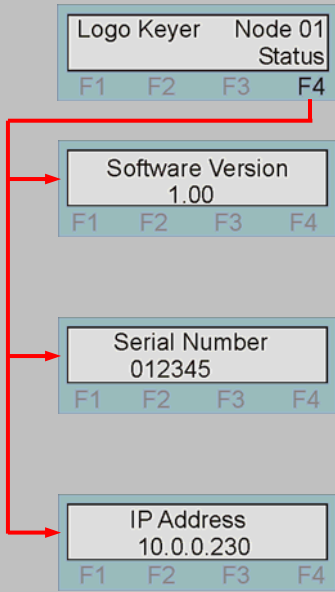
The MultiLogo menu tree

Note: Function key LEDs are illuminated when active.

Status Menu

The status menu contains useful information about the board.

MultiLogo status menu	Description
Logo Keyer Node 01 Status F1 F2 F3 F4	From the Home menu, press F1 to select the status menu, which is then traversed by rotating the shaft control.
Software Version 1.00 F1 F2 F3 F4	Rotate the shaft control to view the currently fitted software version.
Serial Number 012345 F1 F2 F3 F4	Rotate the shaft control to view the electronically stored board serial number.
IP Address 10.0.0.230 F1 F2 F3 F4	Rotate the shaft control to view the current IP address.

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	Function when Off
HD	Yellow	Video input standard is HD (High Definition)	Input not present
SD	Yellow	Video input standard is SD (Standard Definition)	Input not present
PSU	Green	Good power supply (PSU) rails.	One or more of the monitor supplies is out of specification
	Yellow	No current function	
	Yellow	No current function	
	Yellow	No current function	

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 SD/HD 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 card from the rack and re-inserting it after a few seconds. It is safe to re-insert the card whilst the rack is powered

7 Specification

General

MultiLogo V130

Dimensions	100mm x 266mm module with DIN 41612 connector
Weight	200g
Power consumption	12.5W

MultiLogo V430

Dimensions	'Double decker' 100mm x 266 mm module with DIN 41612 connector
Weight	300g
Power consumption	16W

Inputs

MultiLogo V130   One SD/HD input

MultiLogo V430   Four SD/HD inputs

Video	HD or SD SDI 270Mb/s to 1.485Gb/s serial digital compliant to EBU 3267-E, SMPTE 259M and SMPTE 292M
	HD (1.485Gb/s) Cable equalisation up to 140m with Belden 1494 or equivalent. (Approx 100m with Belden 8281)
	SD (270Mb/s) Cable equalisation >250m Belden 8281 or equivalent
	Note: HD cable length assumes new version of frame
Return loss	-15dB for 50MHz to 1.5GHz

Outputs

Number and type:	Two main and one preview outputs, reclocked SDI 270Mb/s - 1.485Gb/s to EBU 3267-E, SMPTE 259M and SMPTE 292M
	Output follows input format.
	Belden 8281 or equivalent
	HD (1.485Gb/s) – 100m
	SD (270Mb/s) >250m
Jitter	Typically 0.2UI, 10Hz
Relay bypass	Input to main output (switched)

Processing

Vertical data	Passes entire SDI stream, including HANC and VANC
Video store	2 x 2GB multi-port video store DRAM and Flash
GPIs	Three GPIs are available to provide eight different recalls of board setup
	One is available to provide Program/preview mix
	Active pull to ground, pulled up to +5V through 10k resistor
Look-ahead preview	Duplicate keyer functions allow the Aux output to be used to preview the next state and the translation to that state before being applied to the main output
Operating system	uCLinux

Keying

Three keyers can independently bring up three graphics and associated keys from the internal or external sources

Separate gain, lift and opacity controls for each keyer

Additive and multiplicative keying

Separate key signal or self-keyed

Delay through board

Up to one video line. Each input has a one-line TBC to align the input signal timing

Status

LED indication of power supplies OK. Main input present. SD/HD input

Remote control

RS422/485

Port 1: 19200, 8-bit, 1 stop no parity

Port 2: 38400, 8-bit, 1 stop odd parity

Basic control from frame active panel and remote panel

Statesman. Basic control from any PC on a network

Second serial port (link selected instead of GPI inputs) allows connection to control panel and automation systems

100MB Ethernet connection directly from board via rear module

Graphics software

Drag and drop software running on graphics PC

Auto convert most common graphics file formats to required MultiLogo format