23626 SLX2-3GHD3232-CP-DIN
23627 SLX2-3GHD3232-CP-HDBNC
Sublime X² hybrid router

Redundant multi-function compact router

User manual

Rev. F

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Revision history

Current revision of this document is the uppermost in the table below.

Rev.	Repl.	Date	Sign	Change description
F	E	2020-06-10	MB	Removing inactive telephone number of Customer Support USA
E	D	2019-10-09	AAA	Updated pinning for serial port. Added pinning for AES I/O ports.
D	C	2016-12-02	AJM	Added 4K and menu control. Added chapter 10. Updated chapter 1.1, 2.8, 6.3, 8, 9.1
C	B	2016-01-19	AD	Chapter 2.6 updated. I/O numbers added
B	A	2015-10-27	AJM	Added chapter 11 Updated chapter 2.4
A	A-pre1	2015-04-27	SHH/JD/AJM	Updated chapter 5.1
A-pre1	-	2015-03-23	AJM	First version

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1 Product overview

Figure 1

Nevion's innovative Sublime X2 is a router that punches above its weight. With its management, cross point and power redundancy, it features the reliability of large modular routers. A multicore signal processing farm makes it a hybrid router. Its compact form factor makes it ideal for applications where size really matters. And its clever design, brings cost savings to its users.

The latest software upgrade for the Sublime X2 provides the means to route and process UHD/4K streams provided as 4 synchronized 3G signals, as is typically the case with current UHD/4K equipment such as cameras and mixers. The Sublime X2 can handle UHD/4K and 3G/HD/SD simultaneously through sectioning of the ports, allowing for virtually any routing configuration – both square (where the number of inputs matches the number the outputs) and non-square. Configurations can be changed easily on the fly, without interrupting the unaffected signals.

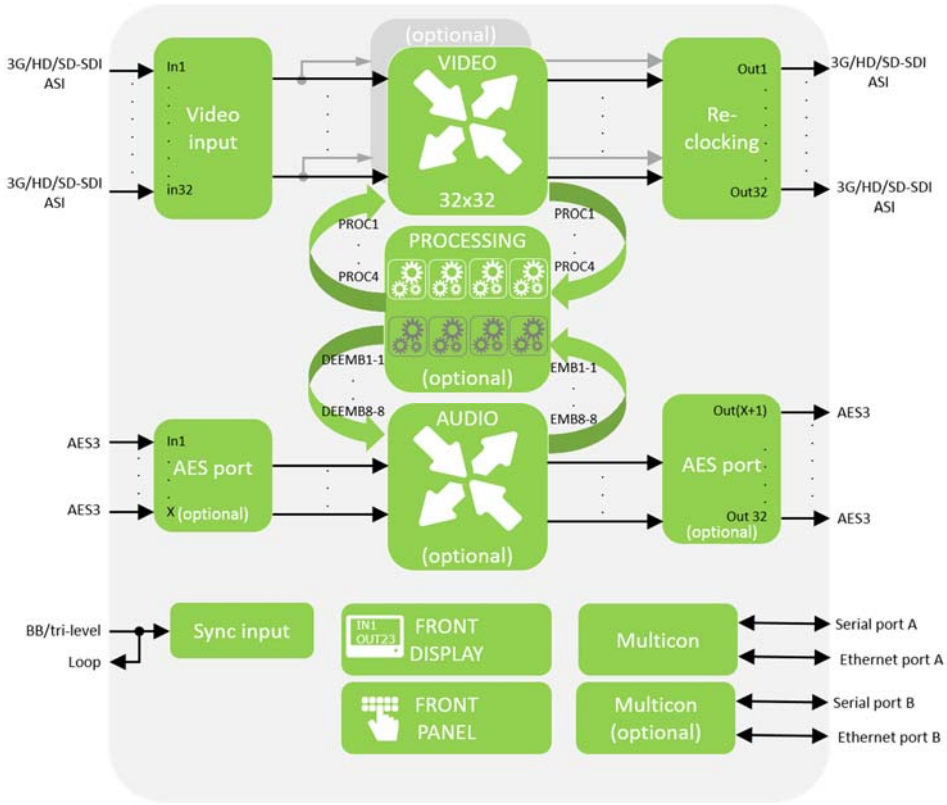


Figure 2 Block diagram of SLX2-3GHD3232-CP

SLX2-3GHD3232-CP is an ultrathin 32x32 router in 2RU supporting redundant cross-point, redundant controller and a quad-core processing module. Each processing core supports clean switching and audio embedding/de-embedding making it well suited for OB and play out applications. The signal processor also offers future proofing by enabling feature upgrades through a software-based processing platform. The SLX2-3GHD3232-CP features a routing level for the de-embedded and embedded audio. An optional AES extension, providing 32 AES I/O ports and scaling the routing level to a 64x64 AES router, makes the router the ideal choice for in-studio routing.

The embedded system controllers provide a powerful web interface for control and management, SNMP support and support for multiple control panels enabling multi user control. Support for external router and 3rd party interfaces makes Sublime X2 central to any routing system.

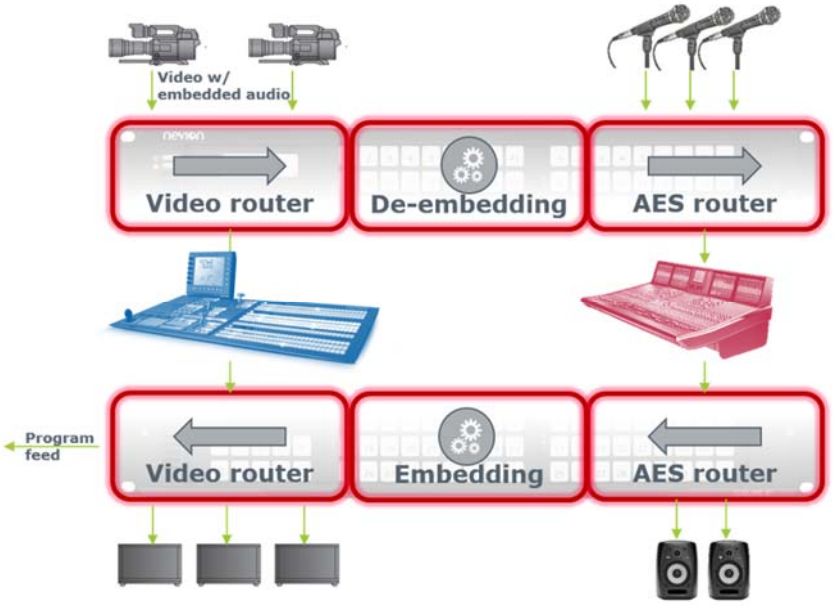


Figure 3 Application example

1.1 Ordering options

23626 SLX2-3GHD3232-CP-DIN

2RU 32x32 3G-SDI compatible compact router with DIN1.0/23 connectors, built-in Multicon controller with WEB interface, SNMP support and support for Nevion control panels. The router also features options for redundant controller, redundant cross point and audio/video processing modules. Single PSU included.

23627 SLX2-3GHD3232-CP-HDBNC

2RU 32x32 3G-SDI compatible compact router with HD-BNC connectors, built-in Multicon controller with WEB interface, SNMP support and support for Nevion control panels. The router also features options for redundant controller, redundant cross point and audio/video processing modules. Single PSU included.

23628 SLX2-HW-RC

Hardware option for redundant Multicon controller to Sublime X2.

23629 SLX2-HW-RX32

Hardware option for redundant cross point to 32x32 Sublime X2 routers.

23630 SLX2-HW-VPROC4

Hardware option for processing board with 4 processing cores enabled to 32x32 Sublime X2 routers . HW only, processing features licensed separately.

23631 SLX2-HW-AVPROC4

Hardware option for processing board with 4 processing cores and 32 port AES breakout to 32x32 Sublime X2 routers. HW only, processing features licensed separately.

23632 SLX2-SW-CQ1

Software option for single channel clean-switch. SLX2-HW-VPROC4 or SLX2-HW-AVPROC4 required.

23633 SLX2-SW-EMB1

Software option for single channel embedder/de-embedder. SLX2-HW-VPROC4 or SLX2-HW-AVPROC4 required.

23983 SLX2-SW-ADD4PROCS

Software option for adding 4 more processing core. SLX2-HW-VPROC4 or SLX2-HW-AVPROC4 required.

23637 SLX2-SW-3PP

Software option enabling 3rd party protocols.

23636 SLX2-SW-VX-CTRL

Software option enabling control of external VikinX routers

24242 SLX2-SW-4K-ROUTE

Software option enabling control of 4K level

23638 SLX2-PWR-80

80W 12V Power supply for Sublime X2

2 Specifications and ports

2.1 General

Size	1U in 19” rack system
- Width	482.6mm
- Height	88.1mm
- Depth	45mm base unit with no HW options 59mm with 23630 SLX2-HW-VPROC4 82mm with 23631 SLX2-HW-AVPROC4
Weight incl. 1x PSU	2.0kg
Temperature range	0 to 40C

2.2 Power Supply

Number of inputs	2
Voltage range	10 to 15VDC
Connector	Samtec IMS5-02-02. Pin 1 is +

Figure 4

Power monitoring	Power LED in front and web interface
Power consumption	<25W with no HW options <30W with 23630 SLX2-HW-VPROC4 <30W with 23631 SLX2-HW-AVPROC4

Figure 5

2.2.1 SLX2-PWR-80

80W power supply for Sublime X2. One power supply is included with the router. One additional power supply can be added.

Dimension	145*60*32mm (L*W*H)
Weight	0.45Kg
Voltage range	90 ~ 264VAC 127 ~ 370VDC
Frequency range	47 to 63Hz

DC voltage	12V+-5%
Power	80W
Power factor (typ.)	PF>0.91 / 230VAC PF>0.95 / 115VAC at full load
Efficiency (typ.)	88%
AC current (typ.)	2A / 115VAC 1A / 230VAC
Inrush current (typ.)	70A/230V
Protection	Overvoltage, over load and over temperature.
AC Mains connector:	IEC 320-C14.
Power monitoring	Green power LED

Figure 6

2.3 Supported signal

SD-SDI, 270Mbps	SMPTE259M
HD-SDI, 1485Mbps	SMPTE292M
3G-SDI, 2970Mbps	SMPTE424, SMPTE425A, SMPTE425B
DVB-ASI	EN50083-9
AES	AES3-1996
Video switch point	SMPTE-RP168
Black burst and Trilevel	SMPTE170m, ITU-R BT.1700, ITU-R BT.709-5

2.4 Electrical video inputs

Number of inputs	32
Connector	HD-BNC for 23627 SLX2-3GHD3232-CP-HDBNC
	DIN 1.0/2.3 for 23626 SLX2-3GHD3232-CP-DIN
Impedance	75 Ω
Return loss	>15dB (5MHz – 1.5GHz)
	>10dB (1.5GHz – 2.97GHz)
Cable equalization	Automatic
	>100m 3G-SDI with Belden 1694A typical
	>180m HD-SDI with Belden 1694A typical
	>400m SD-SDI with Belden 8281 typical

Figure 7

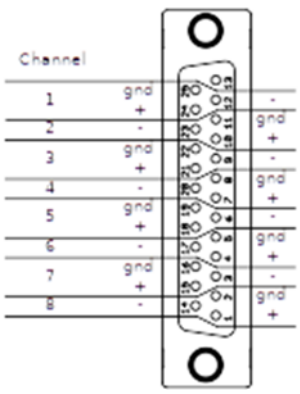
2.5 Electrical video outputs

Number of outputs	32
Connector	HD-BNC for 23627 SLX2-3GHD3232-CP-HDBNC
	DIN 1.0/2.3 for 23626 SLX2-3GHD3232-CP-DIN
Impedance	75 Ω
Return loss	>15dB (5MHz – 1.5GHz)
	>10dB (1.5GHz – 2.97GHz)
Signal level	800mVp-p +/-10%
Signal polarity	Non-inverting

Figure 8

2.6 AES I/O ports (optional)

Number of ports	32, direction configure through web interface
Connector	25pin DSUB-D female, TASCAM type
Impedance	110 Ω transformer balanced
Audio data rate	24bit, 48kHz synchronous to sync input
Pinning	



Channel #	DB25 Pin #		
	Hot (+)	Cold (-)	GND
1	24	12	25
2	10	23	11
3	21	9	22
4	7	20	8
5	18	6	19
6	4	17	5
7	15	3	16
8	1	14	2

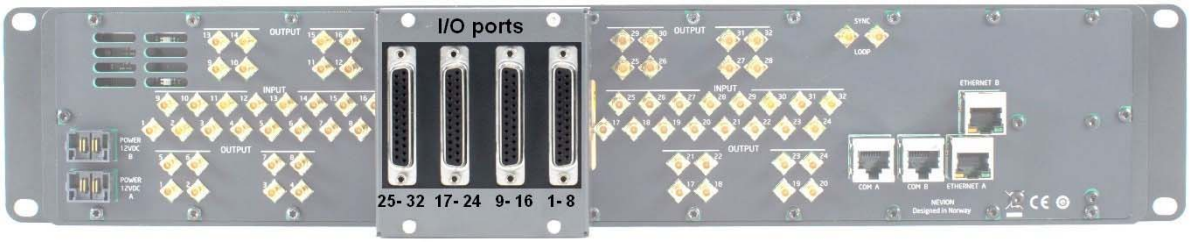


Figure 9

2.7 Sync input

Number of inputs	1 + passive loop
Format	Black&burst PAL and NTSC, Trilevel 720/50p and 720/59p Trilevel 1080/23i and 1080/23p Trilevel 1080/23.98i and 1080/23.98p Trilevel 1080/25i and 1080/25p Trilevel 1080/29i and 1080/29p
Connector	HD-BNC for 23627 SLX2-3GHD3232-CP-HDBNC DIN 1.0/2.3 for 23626 SLX2-3GHD3232-CP-DIN
Impedance	> 1k Ω
Return loss	>15dB (5MHz – 1.5GHz) >10dB (1.5GHz – 2.97GHz)

Figure 10

2.8 Serial port control

Number of ports	1
Connector	RJ45
Format	RS-232, RS-422 and RS-485 configure with Nevion Configurator
Protocol	NCB (VikinX protocol), Flashlink, 3rd party (see Multicon user manual)

Pinning

Pin #	RS-232 mode	RS-422 mode
1	RTS	TX+
2	TX	TX-
3	RX	RX+
4	GND	GND
5	GND	GND
6	CTS	RX-
7	Not in use	Not in use
8	Not in use	Not in use

Figure 11

2.9 Ethernet control

Number of ports	1 or 2 if option 23628 SLX2-HW-RC. One from each internal Multicon
Connector	RJ45
Format	10BaseT and 100BaseT
Protocol	MRP (VikinX protocol), 3rd party (see Multicon user manual)

Figure 12

2.10 Control panel

Display	2 lines and 20 character. Monochrome with blue backlight
Keys	40x40 XY panel with 10 menu/control keys

Figure 13

3 Signal path

The following sub chapter explain the signal flow through the Sublime X2 with the different options included.

3.1 Base unit

The 23627 SLX2-3GHD3232-CP-HDBNC or 23626 SLX2-3GHD3232-CP-DIN with no HW options.

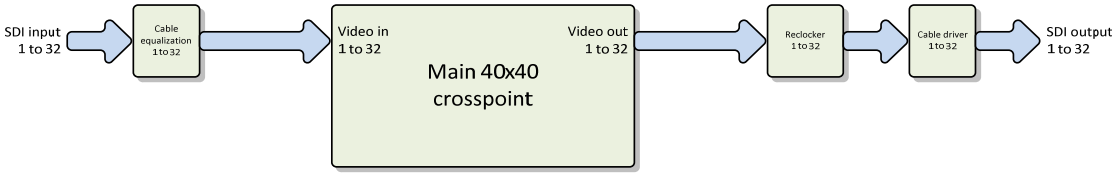


Figure 14 Functional diagram of signal flow in SLX2-3GHD3232-CP base unit

Input video signal is feed to the router on the DIN 1.02.3 or HD-BNC connector to the cable equalization block. This block will analyze the SDI signal and add compensation for high frequency loss on the coaxial cable. Signal presence is detected in this block and presented in the GUI.

From the cable equalizer output the signal is fed to an non-blocking cross-point switch. Any output can be set to any inputs from the control interface.

Each output of the cross-point switch goes to a reclocker suppressing jitter from the signal. The reclocker will auto-detect and lock SD, HD or 3G-SDI signals.

The output of each reclocker is connected to a cable driver. The cable driver can be disable making the output high impedance, and reducing power consumption and heat generation.

If a non-SDI low bitrate signal like MADI is fed to an input it is advised to set the reclocker in bypass mode.

Redundant cross point option

By adding the 23629 SLX2-HW-RX32 hardware option a redundant cross-point switch will be added to the signal chain.

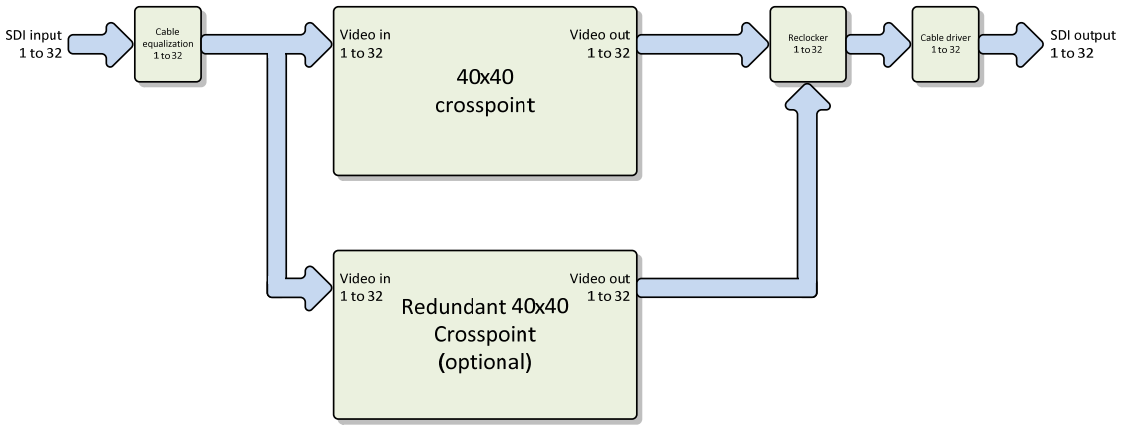


Figure 15 Functional diagram of signal flow in SLX2-3GHD3232-CP with redundant cross-point

The signal out of the cable equalization is feed to both cross-point switch.

In normal operation the replaceable cross-point will act as main. The fixated on-board cross-point will be acting as back-up and will be in hibernate mode, allowing only the switch logic knowing the cross-point settings to be active. This reduces heat and extends the life time.

If the main cross-point has a failure, the back-up can be manually switched to active. The failing cross-point switch is then deactivated and put in low power mode to increase it lift time.

The reclockers have a built-in 2x1 switch and selects to receive signals from whichever cross-point switch is active.

3.2 VPROC4

By adding the 23630 SLX2-HW-VPROC4 hardware option an audio/video processing unit will be added to the signal chain.

The video processing unit have eight inputs and eight outputs connected to both cross-point switches. The VPROC4 options enables 4 processing cores each having the capability to process and manipulate video as well as audio. The processing unit is split up into cores and not channels ,as future features might use more than one core to do operations to a single video channel.

See chapter about Audio/Video processing for available processing features.

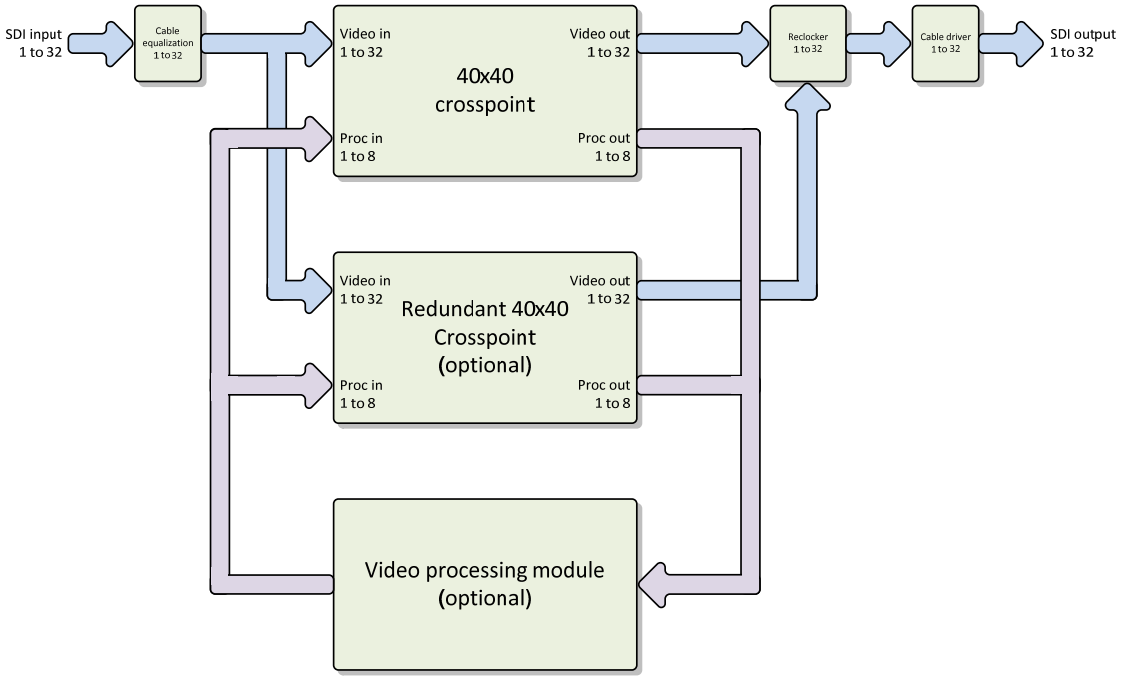


Figure 16 Functional diagram of signal flow in SLX2-3GHD3232-CP with redundant cross-point and video processing module.

3.4 AVPROC4

The 23631 SLX2-HW-AVPROC4 hardware option has the same audio/video processing unit as VPROC4 but includes a 32-port transformer balanced AES3 extension board. The extension board holds four D-SUB 25 Female, with TASCAM style connectivity for AES3. Each AES3 port can be individually configured as an input or an output.

See chapter about Audio/Video processing for available processing features.

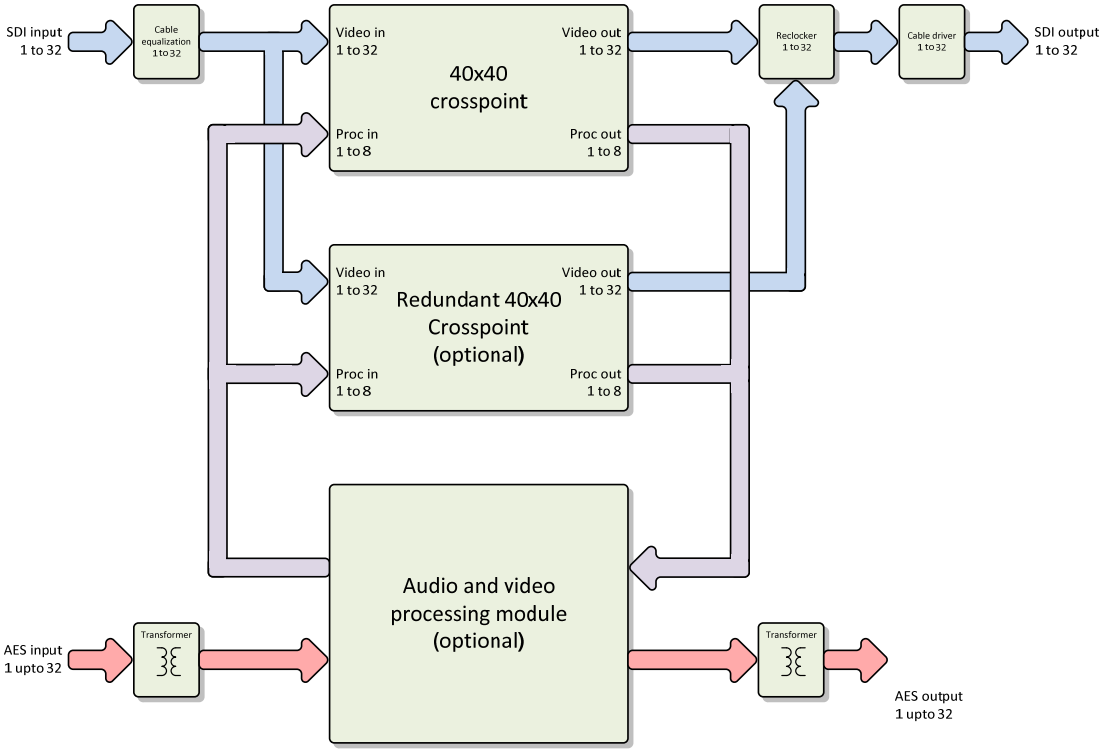


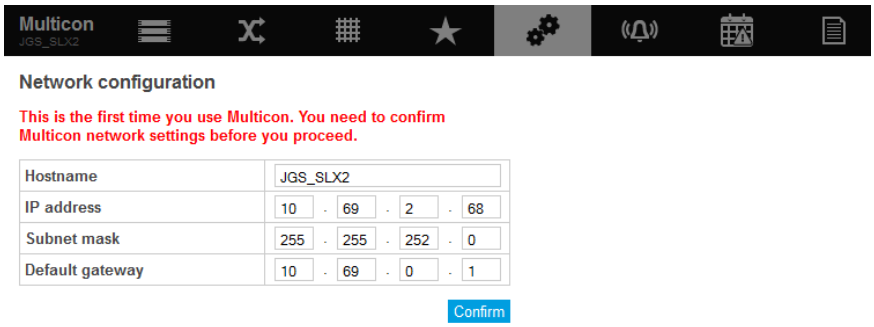
Figure 17 Functional diagram of signal flow in SLX2-3GHD3232-CP with redundant cross-point and video processing module with AES port extension.

4 Getting started

If one Multicon is installed a simple setup can be sued. This setup is described below. For more advanced setup and for unit with two Multicons please use the Nevion configurator.

Follow these steps to prepare the unit with default settings. It will controllable from both front panel and web interface after this.

1) Connect power to either port A or B
2) Connect an Ethernet connection to port A
3) Wait for the unit to power up and display it's IP address in the front display
4) Make sure your PC is on the same subnet as the Sublime X2 before you proceed
5) Open a web browser on a PC and enter the IP address



6) Change the network settings and press Confirm. Sublime X2 will prepare default settings and forward you to the main page. ***Note! If you change subnet, remember to also change the IP address on the PC.***
7) Router is now ready to use

Default settings contain of a video level (Level 1 40x40), controllable from the front panel and web interface. If hardware option for processing is present, an audio level (Level 101 98x96) is controllable from the web interface.

5 Configuration

5.1 Switching point

It is possible to configure the video switching point in the router. The settings are made through the web interface.

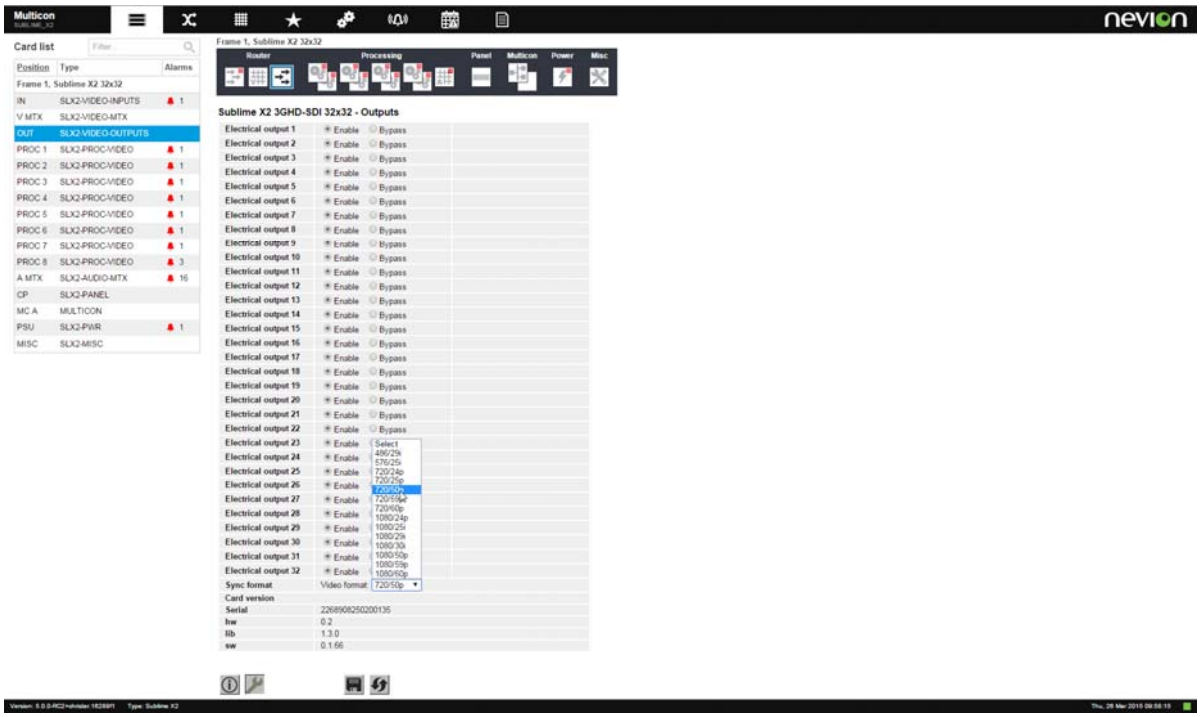


Figure 18

The sync signal is generated from the signal present on the sync input, see chapter 2.7.

The sync input format is automatically detected by the router. The user must select at which point in time the switching should happen. This is done by selecting the video format that match the format on the SDI channels on the router.

Following switching formats can be selected:

- 486/29i, 576/25i
- 720/24p, 720/25p
- 720/50p, 720/59p,720/60p
- 1080/24p, 1080/25i,1080/29i,1080/30i
- 1080/50p,1080/59p,1080/60p

The router will only switch on the first field in a frame, so interlaced settings are usable for progressive formats as well.

5.2 Input equalization

Each of the 32 SDI input has an automatically cable equalization.

5.3 Reclocker

Each of the 32 outputs have an reclocker to remove jitter in the signal. This can be set to enable or bypass. For none SDI or ASI signal it is advised to set this to bypass. The setting is found in the video outputs configuration page. Apply settings with the save button.

6 Front control panel operation

Figure 19

6.1 Status indicator

There are two status indicators on the upper left side.

6.1.1 Power status

The upper LED indicates the status of the connected PSU on the power connector described in 2.2. The unit must be configured to have one or two PSU connected. This is done from the Power tab. If two PSU are used both external power A and B should be set to normal alarm. If only one PSU are connected to the unit set ignore alarm on the connector which does not have an PSU connected.

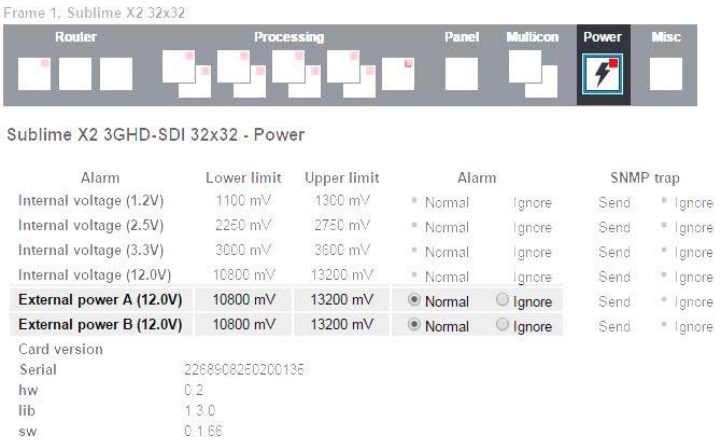


Figure 20

Power status	Two PSU configured	One PSU configured
Black	No power to the unit or power switch is off.	No power to the unit or power switch is off.
Green	Both PSU are working	PSU are working
Yellow	One or two of the connected PSU does not have a valid voltage and the alarm is acknowledged in Multicon Gyda.	The connected PSU does not have a valid voltage and the alarm is acknowledged in Multicon Gyda.
Red	One or two of the connected PSU does not have a valid voltage and the alarm is not acknowledged in Multicon Gyda.	The connected PSU does not have a valid voltage and the alarm is not acknowledged in Multicon Gyda.

6.1.2 Alarm status

The lower indicates the alarm status of the unit. This correspond to the alarm list from the web interface.

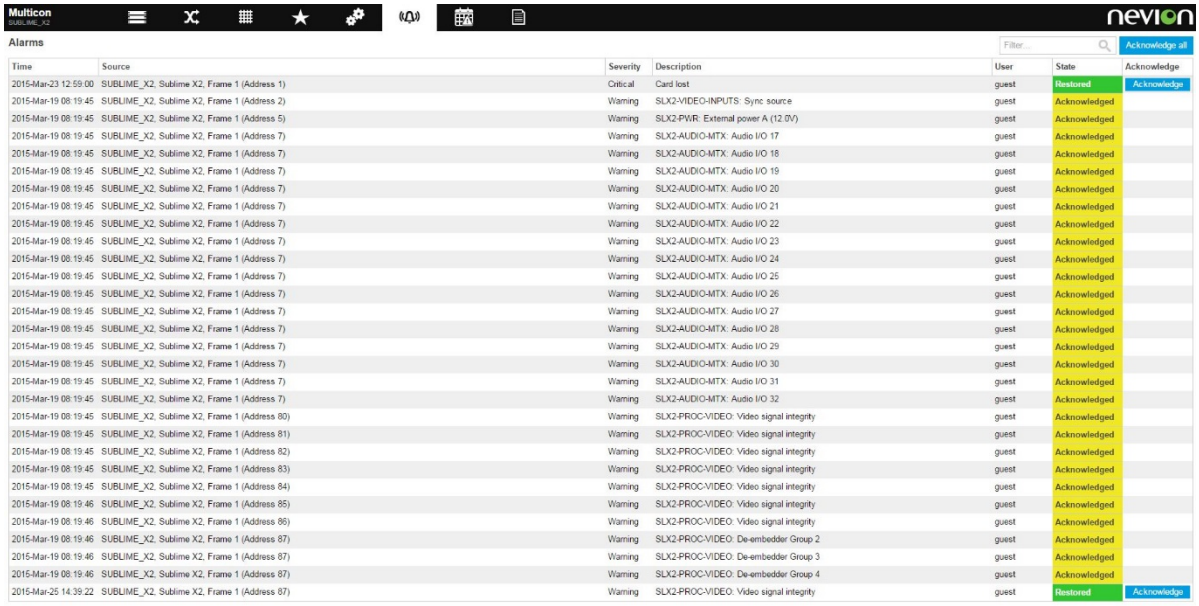


Figure 21

Alarm status	
Black	No power to the unit or power switch is off.
Green	No alarm in the unit
Yellow	All alarms in the unit are acknowledged in Multicon Gyda.
Red	Oen or more alarms in the unit are not acknowledged in Multicon Gyda.

6.2 Display description

When first power up the display will show the IP-address for the unit. After the first output key has been pressed the display will show the mnemonics for the selected out and input.

6.3 Button description

6.3.1 Panel Enable

The panel always starts in disabled mode. In this state the button will be red and all the other buttons will be disabled. When pressing the button the panel will be enabled and the color will change to green. A status request will also be sent to get information on active levels.

6.3.2 Menu

Activates the menu. Use enter to go into a menu or to change parameters. Back are used to go back in the menu. Up and down keys are used for navigation in the menu. Press menu button to disable menu function and go back to control mode.

6.3.2.1 Menu tree:

1/5: Control mode

Press Enter to select the level that should be controlled by the panel.

2/5: Network

Network 1/2 IP

Shows the main Multicon IP-address.

Network 2/2 MAC

Shows the main Multicon MAC-address.

3/5: Alarms

List all alarms in the system. The Enter key can be used to toggle each alarm from “acknowledge” and “new”.

4/5: Versions

Version 1/5: MC A

Shows software and hardware version on main Multicon.

Version 2/5: MTX

Shows software and hardware version on main matrix module.

Version 3/5: CP

Shows software and hardware version on front panel.

Version 4/5: PROC

Shows software and hardware version on processor module if installed.

Version 5/5: MC B

Shows software and hardware version on redundant Multicon.

5/5: Administration

Admin 1/1: Reboot

Reboots main Multicon.

6.3.3 Enter

Used when navigate in the menu.

6.3.4 Back

Used when navigate in the menu.

6.3.5 Up

Used when navigate in the menu.

6.3.6 Down

Used when navigate in the menu.

6.3.7 Take on/off
The Take on/off button enables or disables the Take button. If no take button is defined, Take on/off is always off. On first start-up the take button is enabled. Later it will read the last status from the flash memory.

6.3.8 Take
The Take buttons LED is normally off. If the Take on/off button is set to “on”, no commands will be sent from the panel until the Take button is pressed. The last selected buttons and the take button will blink, until the Take button is pressed and the command is sent from the panel.

6.3.9 Lock
A Lock Toggle button toggles the lock-status on the active output on all enabled audio- and video-levels. If the active output on any of the enabled levels is locked before pressing the button, they will be unlocked. If not the active output on all enabled levels will be locked. A locked output can’t be switched.

6.3.10 Protect
A Protect Toggle button toggles the protect-status on the active output on all enabled audio- and video-levels. If the active output on any of the enabled levels is protected before pressing the button, it will become unprotected. If not, the active output on all enabled levels will be protected. A protected output can’t be switched by anyone else but the user that protected it.

6.3.11 Input
An Input button switches the active output to the selected input. If the Take button is enabled, the switch will not be executed until the Take button is pressed.

When switching using the Input button, all enabled audio- and video-levels will be switched from the selected input to the active output.

6.3.12 Output
An Output button is used for selecting output 1 to 32 or output 1 to 8 from VPROC4 or AVPROC4 unit. The corresponding input signal that is routed to the outputs is selected on the input keys.

.

7 Software upgrading

There are several layers of software on the Sublime X^2 device. These layers are upgraded in different places in the Multicon GUI.

7.1 Upgrading the Multicon management software

See the user manual of Multicon.

7.2 Upgrading the firmware of the different modules of Sublime X^2

The following modules have their separate firmware files that are upgradable:

- The main module – housing the cross-point cards
- The front panel – the front button panel with display
- The processing module – the back mounted processing module with or without the audio connectors.

The upgrade of these modules are done by first uploading the new firmware for the module to the Multicon controller. This is done in the Maintenance menu from configuration drop-down menu at the top. Press “choose File” Under the Flashlink firmware on this page, select you file from its location and press “upload”. The file is now uploaded to the Multicon controller.

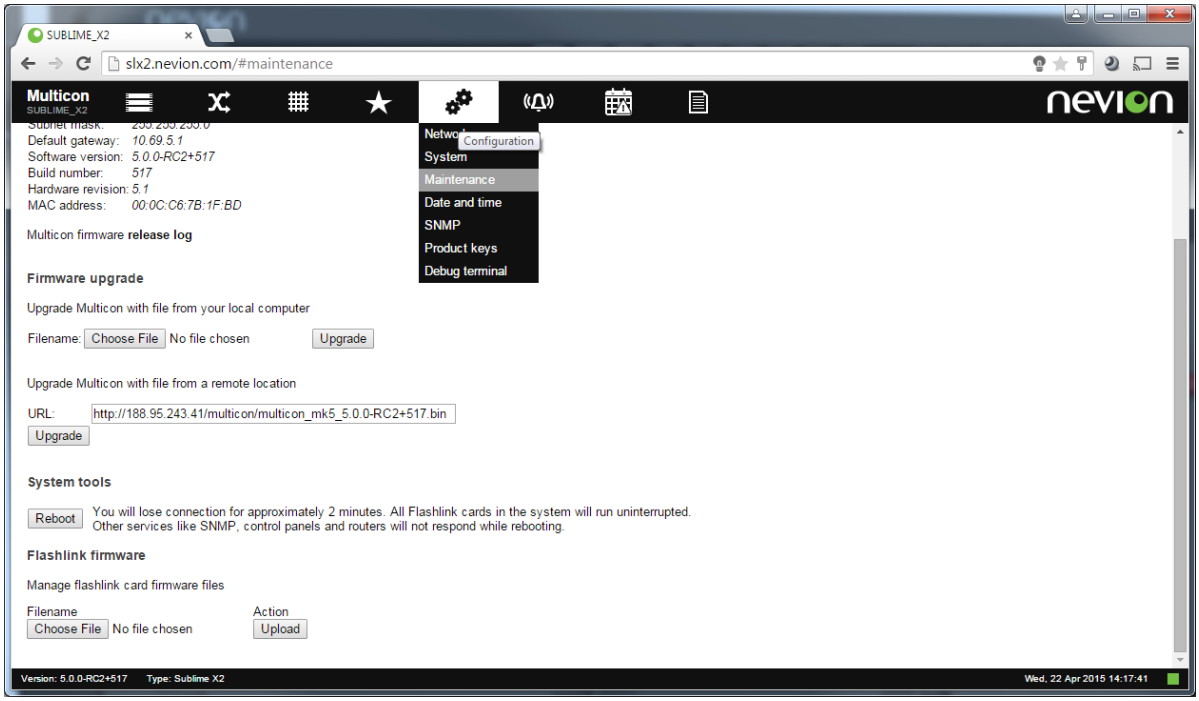


Figure 22

From the Multicon controller the firmware can be uploaded to the modules. This upload is initiated from the configuration page of each module.

7.2.1 Main module

The firmware to the main module is uploaded from the configuration page of the Misc module.

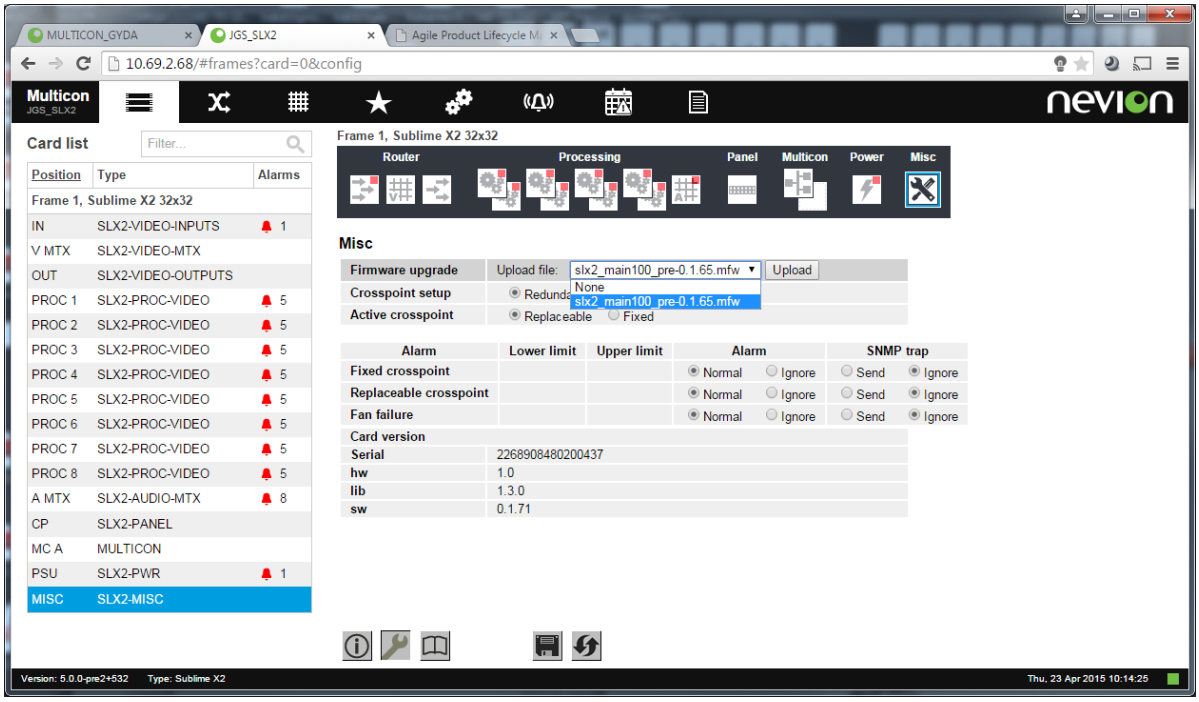


Figure 23 Configuration page of the SLX2-MISC module, ready for upload of firmware

7.2.2 Front panel

The firmware to the control panel is uploaded from the configuration page of the Control Panel module.

7.2.3 Processing modules

The firmware to the processing module is uploaded from the configuration page of the Audio matrix module.

8 Processing features

The SLX2-HW-VPROC4 and SLX2-HW-AVPROC4 hardware options enables processing features on the Sublime X2. These features are generally licensed, but a monitoring feature giving information about inputs signal format and signal integrity to a signal entering a processing core is always enabled. This feature can be setup to create alarms both on the web interface and in SNMP. If the SLX2-HW-AVPROC4 is purchased the audio level also allows routing between the external audio ports.

If SLX2-HW-VPROC4 or SLX2-HW-AVPROC4 is purchased, 4 processing cores are enabled. In addition to the monitoring feature, each core can simultaneously do:

1) Video Clean and Quiet switch
2) Audio Embedding/De-embedding

These features are enabled and assigned to a core thru a licensing configuration. To enable good flexibility, the licenses can be moved between cores so that one core can feature embedding/de-embedding and another can feature clean and quiet switch. By purchasing the SLX2-SW-ADD4PROCS licesn the unit will have 8 processing cores.

8.1 Video Clean and Quiet switch

This features will remove any glitch noise created by a switch made according to RP168. It requires for the signals being switched to be of the same format and line synchronous to each. The switch will also fade out and fade in the audio to remove audio click sounds from the switch.

8.2 Audio Embedding/De-embedding

This feature enables an 8 stereo-channel de-embedder and embedder to a processing core. The video presented to the input of this core will have its 8 stereo-pairs de-embedded and available in the audio level. The signal can also simultaneously embed 8 stereo-pairs from the audio level. The embedder function is enabled from the configuration page of each core. Settings for 24bit/20bit audio handling and audio control packet insertion for SD embedding is also available from the configuration page.

8.3 Assigning licenses

Assigning the licenses is done in the “product keys” menu from the configuration drop-down menu at the top. If two Multicon are present. both Multicons need to be assigned licenses.

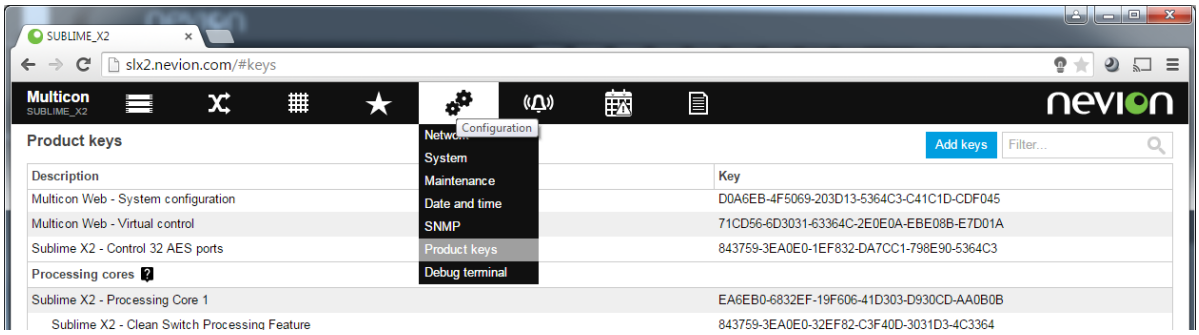


Figure 24

This opens a view of all the product keys available with the product.

The Processing keys are found a bit down on the page under **processing cores**.

By selecting a core, one can see which inactive processing features are available for assignment.

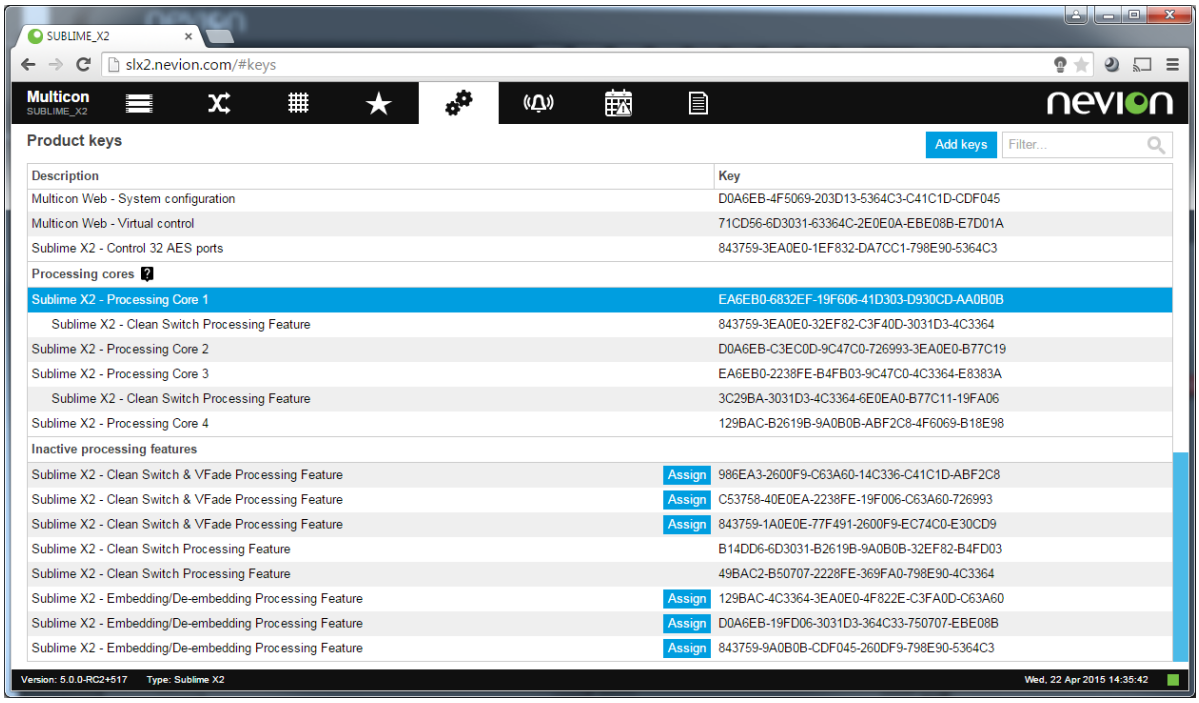


Figure 25

By selecting an active feature on a processing core, one can also release the feature license to make it available for other cores to use.

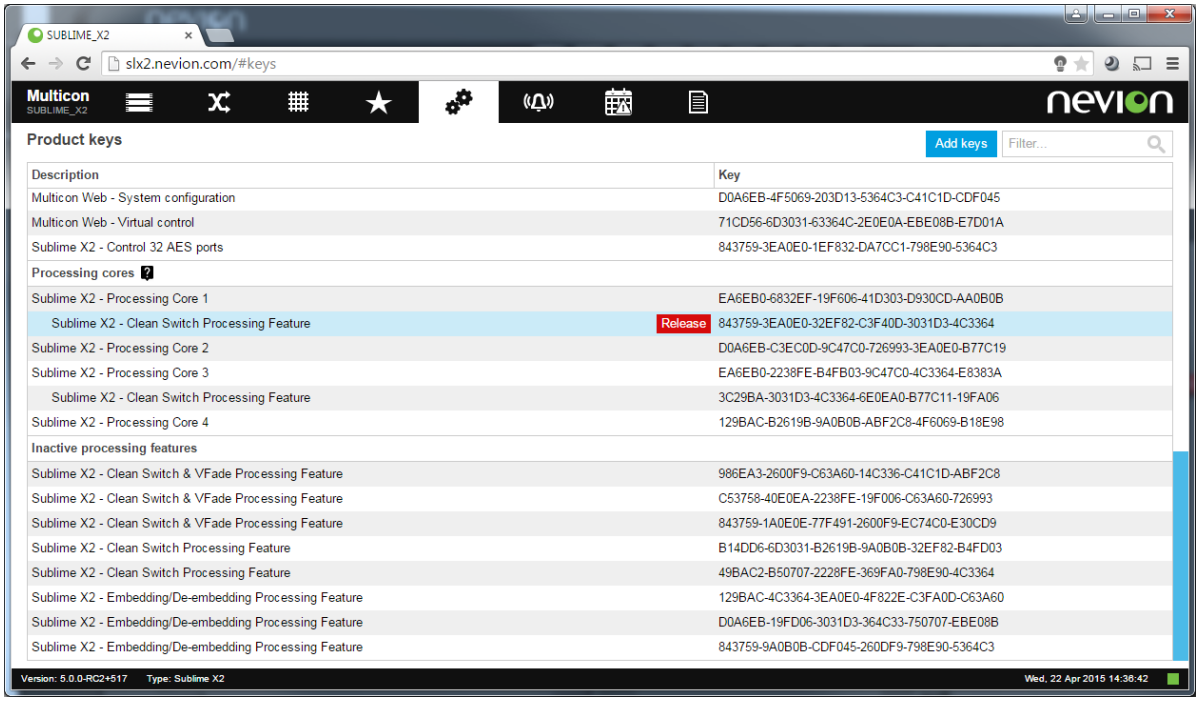


Figure 26

9 Operation

There are several ways of operating the Sublime X^2. It can be in a stand-alone system, where it is operated from its web interface, or it can be setup in a system with other routers and control panels where it might be operated thru several different devices.

The stand-alone system operation is described in this user manual. For full system operation with other devices, see the Multicon user manual for configuration and operation.

9.1 Stand-alone operation

The router provides a 32x32 video level. If a processing module is purchased with the router an 98x96 audio level is also provided. If 4K is purchased with the router an 4K level is also provided. These three levels can be controlled in the web page thru two web interfaces, list view and matrix view.

9.1.1 List view

The list view shows available inputs and outputs from the selected level.

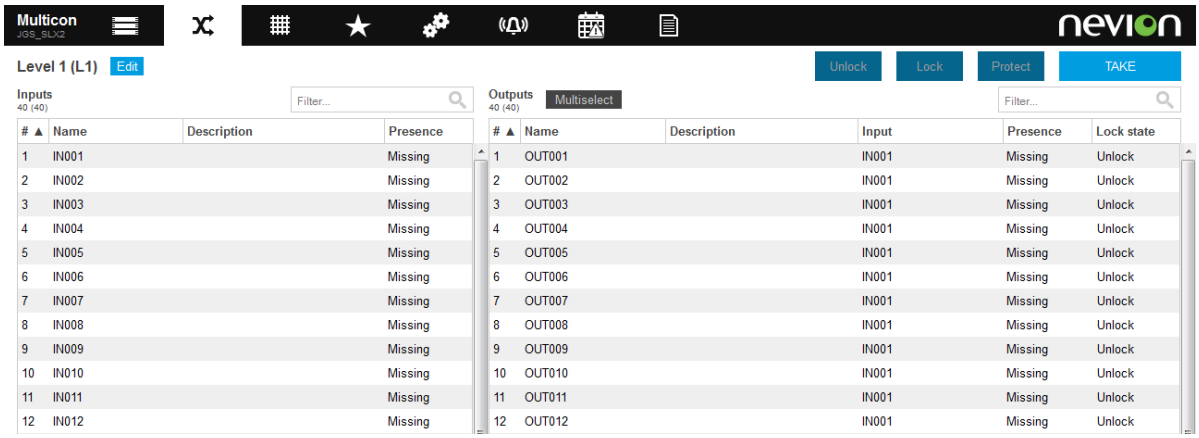


Figure 27

The following information is shown for an input:

- Configured name (label) for the input
- Configured description for the input
- Signal presence status for the input (present missing or unknown).

The following information is shown for an output:

- Configured name (label) for the input.
- Configured description for the input.
- Signal presence status for the input (present missing or unknown).
- Input port that has been routed to the output.
- Lock state for the output (lock, protect or unlock).

The following functions are available from the List View:

- Select input and output(s) and click Take to set the crosspoint.
- Select output(s) and click Lock or Protect to lock or protect an output to a specific input.
- Select output(s) that have previously been locked or protected and click Unlock to remove the lock or protect.

The List View supports Multiselect mode. Enable this by clicking the Multiselect button. Multiple outputs can then be selected before the Take is clicked.

The List View also supports direct editing of names and descriptions for inputs and outputs. To enable the editing mode click the Edit button and perform required changes. When all changes are done unclick the Edit button.

9.1.2 Matrix View

Matrix View shows available inputs and outputs on the selected level.

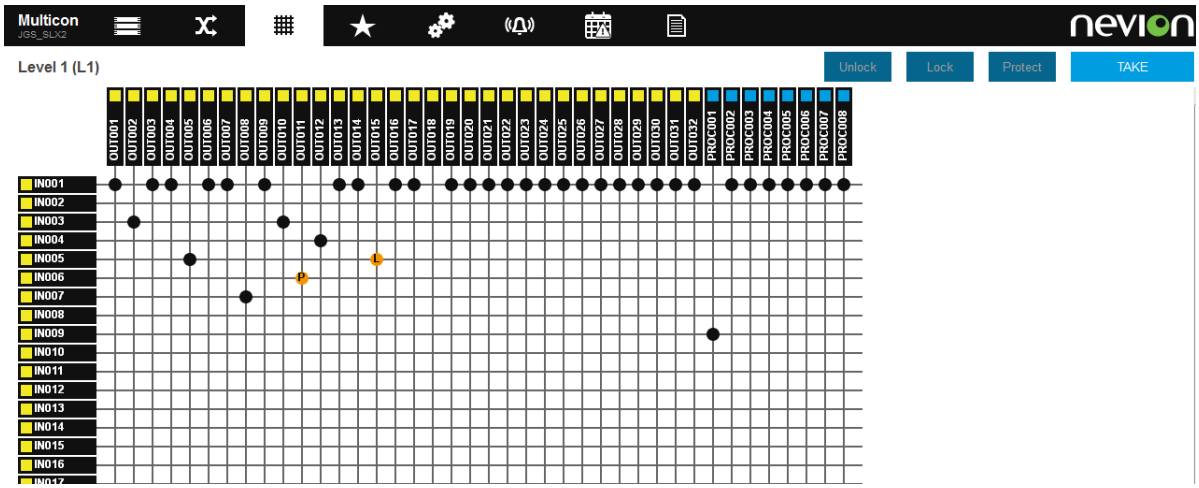


Figure 28

The following information is shown for inputs and outputs:

- Configured name (label) for the input or output.
- Signal presence is presented using a colored symbol next to the name (green means signal present, yellow signal missing and blue unknown).

Inputs are presented vertically on the left side of the matrix and outputs are presented horizontally on the top.

The operator may position the mouse pointer over a crosspoint connecting an input and output and select this to be set. Note several crosspoint settings may be made at once. The Take button is clicked to set the selected crosspoints for the selected level.

The operator can also select an already set crosspoint in order to lock or protect it. Only one crosspoint may be selected at a time for the lock and protect functions. To activate the lock or protect click the Lock or Protect buttons at the top right of the view.

Unlocking works in a similar manner by selecting a crosspoint that has previously been locked or protected and click the Unlock button.

9.1.3 Salvo View

The Salvo View shows salvos in the selected salvo group. Salvo and salvo groups are configured in Nevion Configurator and can be controlled from the web interface.

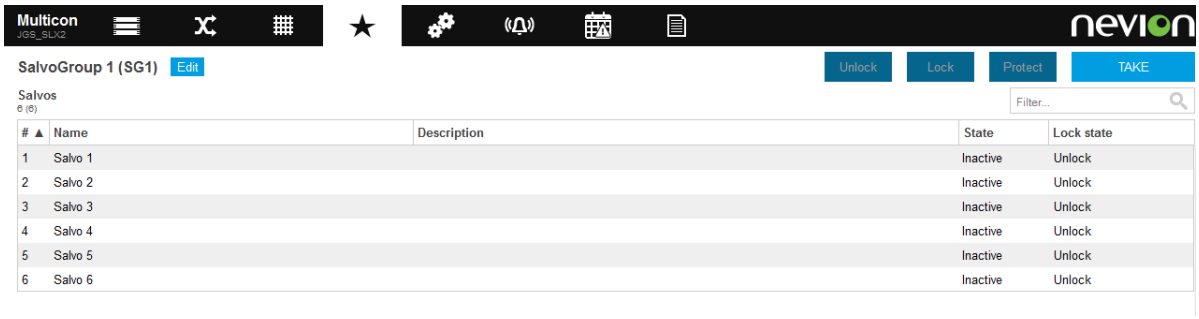


Figure 29

Salvos are organized into salvo groups in a Multicon system. When hovering the mouse pointer over the salvo icon, a list of available salvo groups is presented. After selecting the right salvo group, a list of the salvos in this group is presented.

The following information is shown for a salvo:

- Configured name (label) for the salvo.
- Configured description for the salvo.
- Activation status for the salvo (inactive or active). A salvo is active if all settings in the salvo matches the current state of the included routers or devices.
- Lock state for the salvo (lock, protect or unlock).

To activate a salvo first select the salvo and click Take. Lock and protect of a salvo is performed by selecting the salvo and then clicking the Lock or Protect buttons. Unlock is performed in a similar way.

9.1.4 Audio stereo channel swap

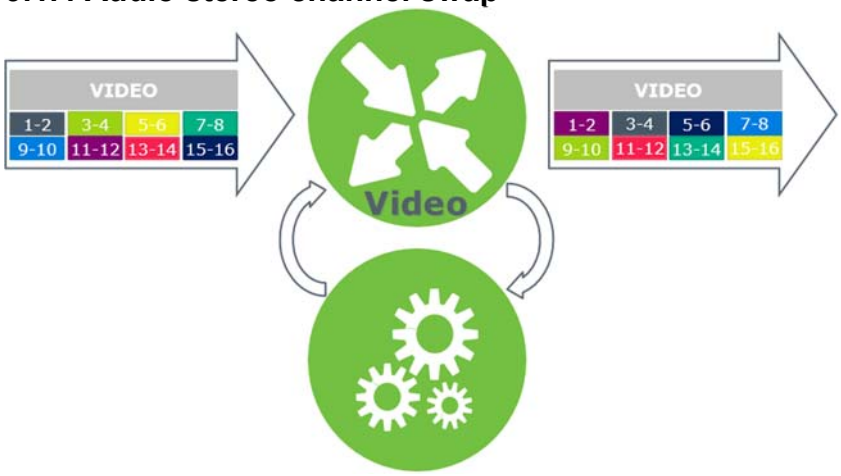


Figure 30 Audio stereo channel swap diagram using one processing core with Embedder/De-embedder license. SLX2-HW-VPROC4 or SLX2-HW-AVPROC4 needed.

Swapping the stereo channels within one video channel can be achieved using a single processing core with the embedder/de-embedder license enabled.

The video channel for audio swap is routed to desired processing core (Level 1 output PROC00X).

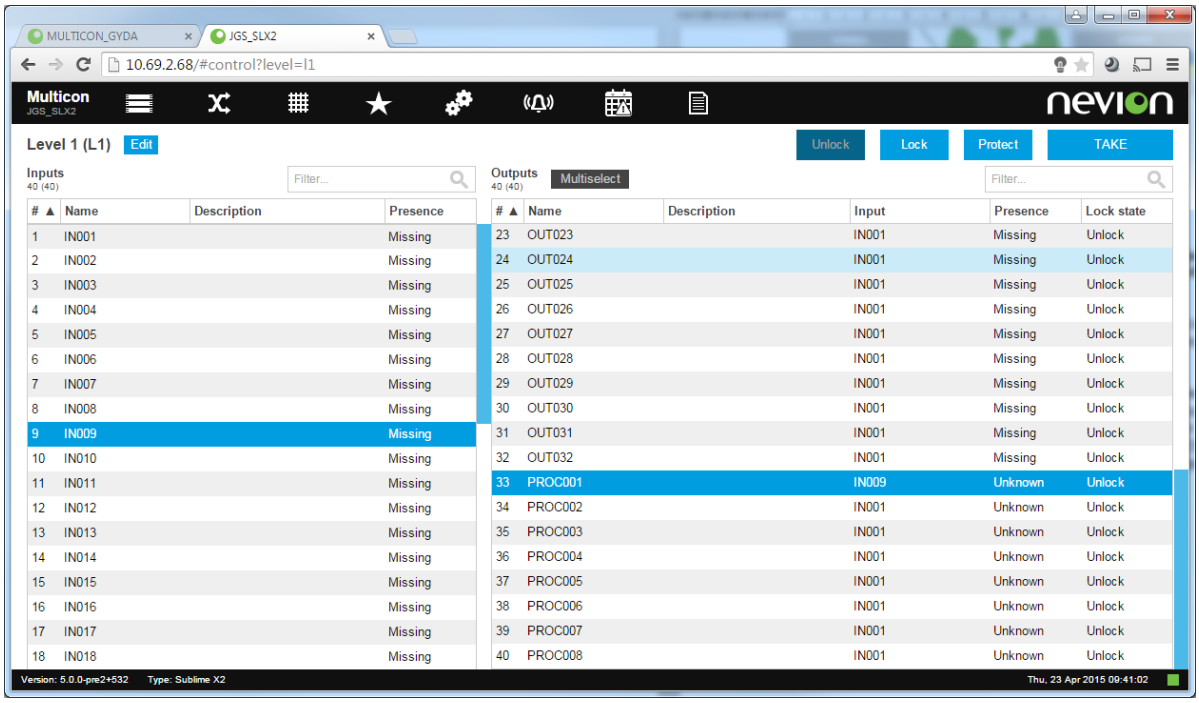


Figure 31 List view of Level 1, IN9 connected to PROC1, processing core 1.

The output of the processing channel is routed to the desired video outputs of the router.

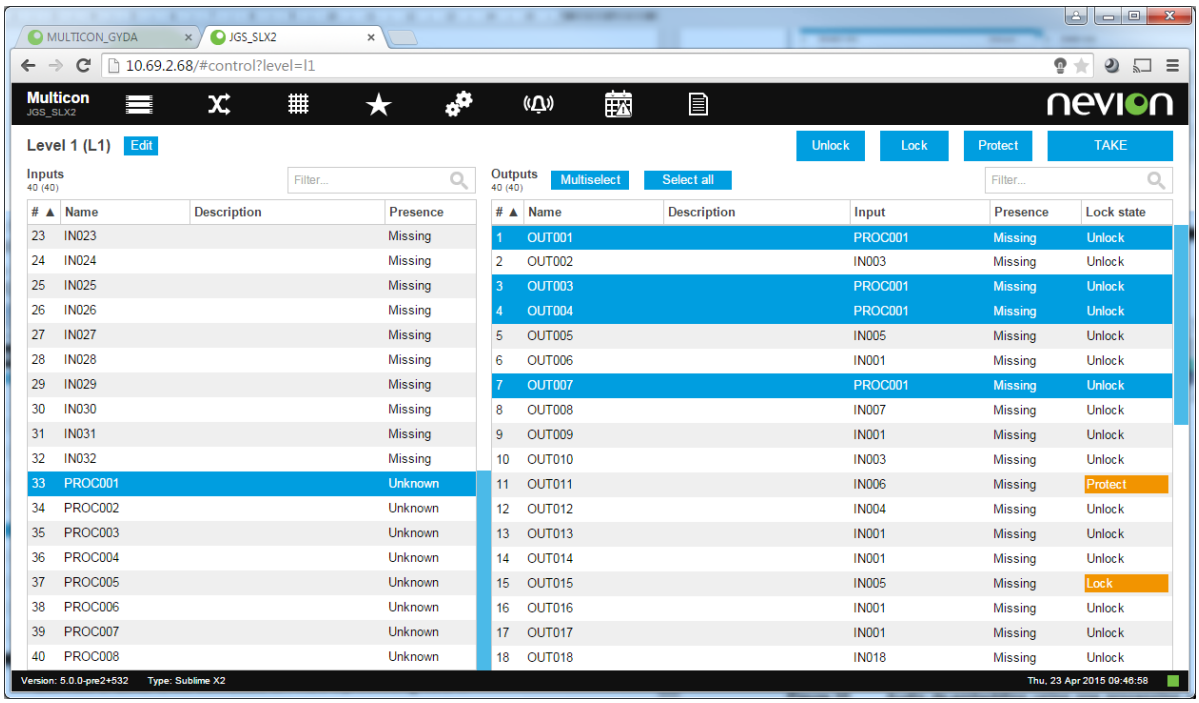


Figure 32 List view of Level 1, Output of processing core 1 routed to video output 1, 3, 4 and 7.

The swap operation is performed on the audio level between the de-embedder channels and embedder channels with equal index number to the processing core being used. If core 1 is used DEMB01-00X and EMB01-00X are available for swap. The stereo pairs on the incoming video are represented by the level 101 inputs DEMB0X-00X and the stereo pairs on the outgoing video are represented by the level 101 outputs EMB0X-00X.

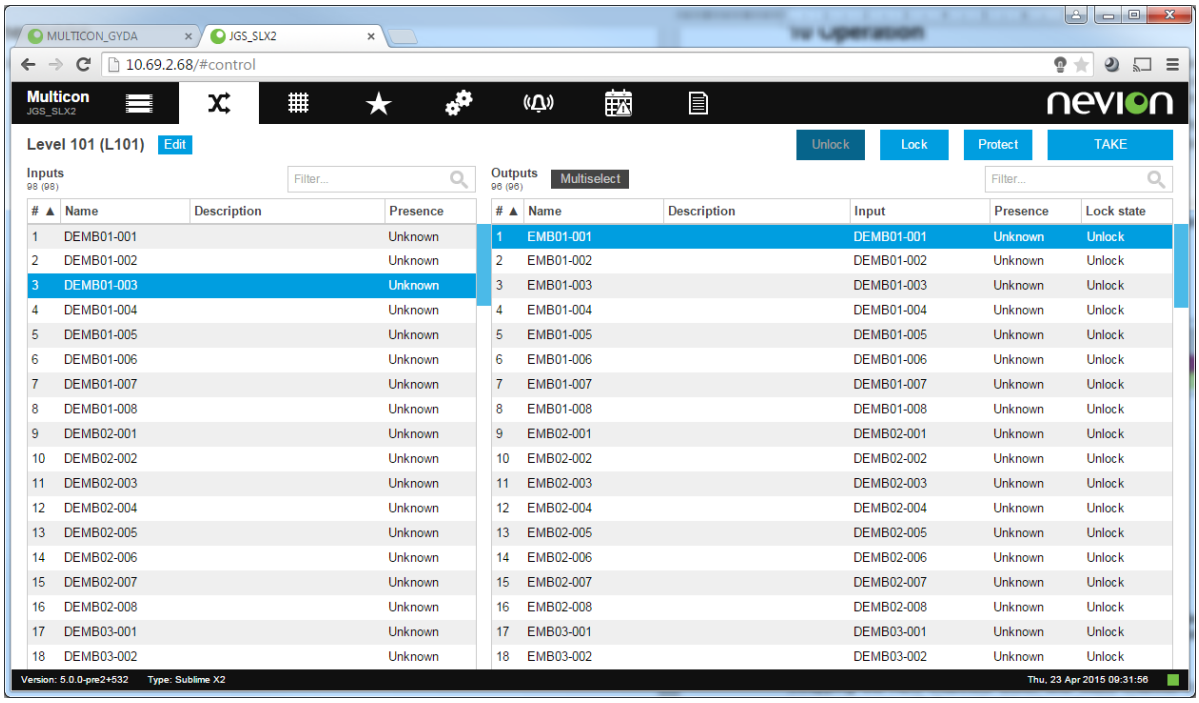


Figure 33 **List view of audio level 101, incoming stereo pair 3 copied to outgoing stereo pair 1.**

9.1.5 Audio De-embed

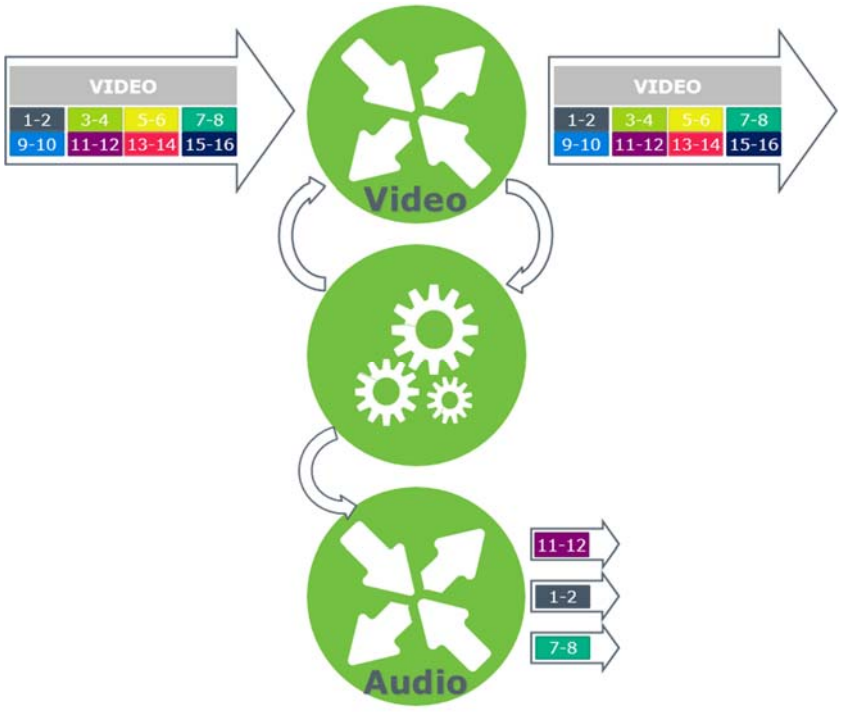


Figure 34 **Audio de-embedding using one processing core with embedder/de-embedder license. SLX2-HW-AVPROC4 needed.**

De-embedding stereo pairs from a video channel can be achieved using a single processing core with the embedder/de-embedder license enabled.

The de-embedding operation is performed on the audio level 101 between the de-embedder channels equal index number to the processing core being used and the AES port outputs (AES-OUTXX).

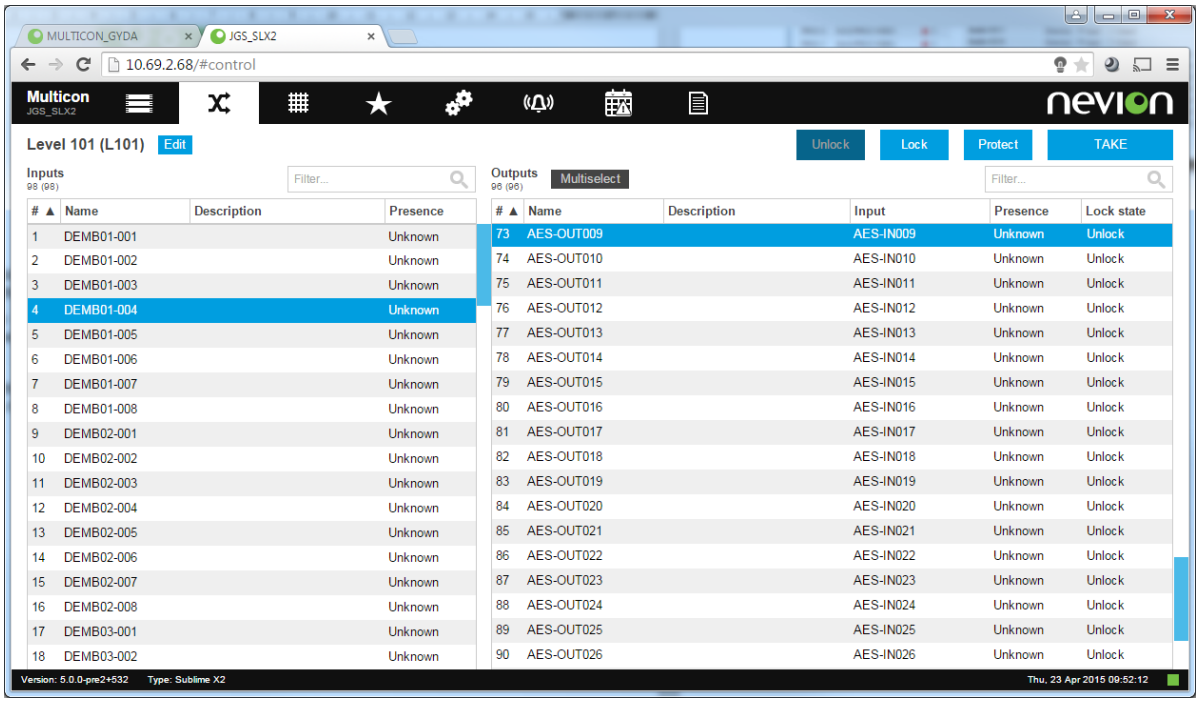


Figure 35 List view of Level 101, Stereo pair 4 of incoming video de-embedded to AES port 9.

Note that the used AES ports must be configured to outputs in the audio matrix configuration page (see figure below).

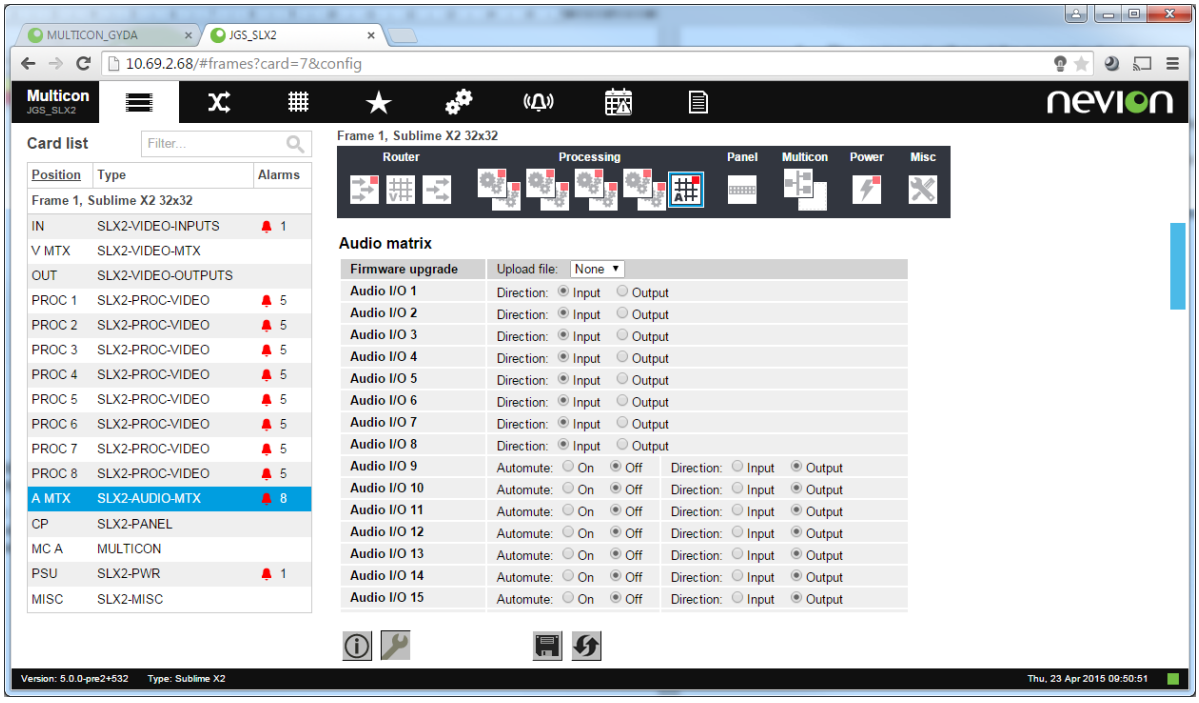


Figure 36 Audio matrix configuration page

9.1.6 Audio embedding from external ports

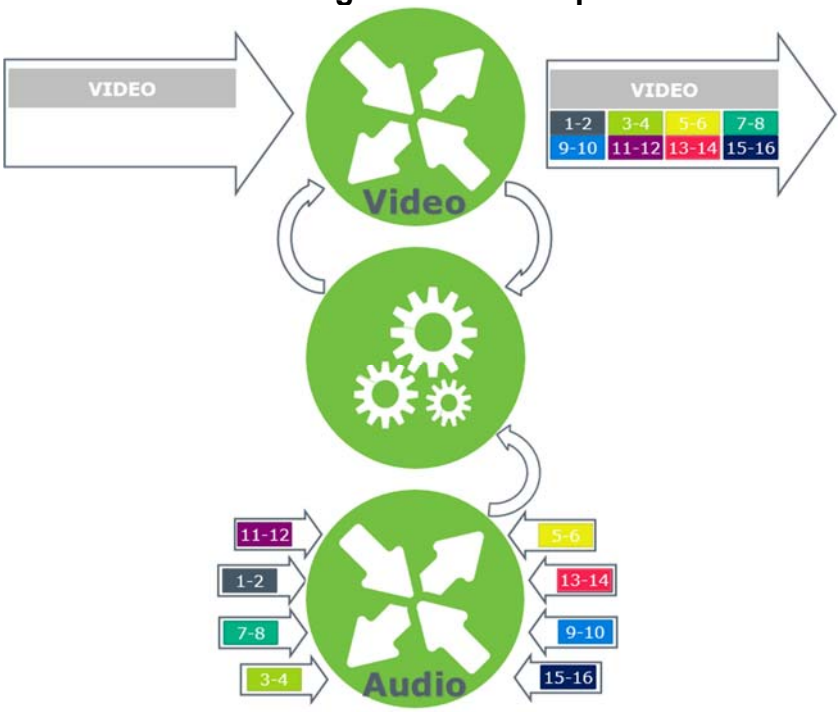


Figure 37 Audio embedding using one processing core with embedder/de-embedder license. SLX2-HW-AVPROC4 needed.

Embedding AES from external ports to a video channel can be achieved using a single processing core with the embedder/de-embedder license enabled.

The embedding operation is performed on the audio level 101 between the AES port inputs (AES-INXX).

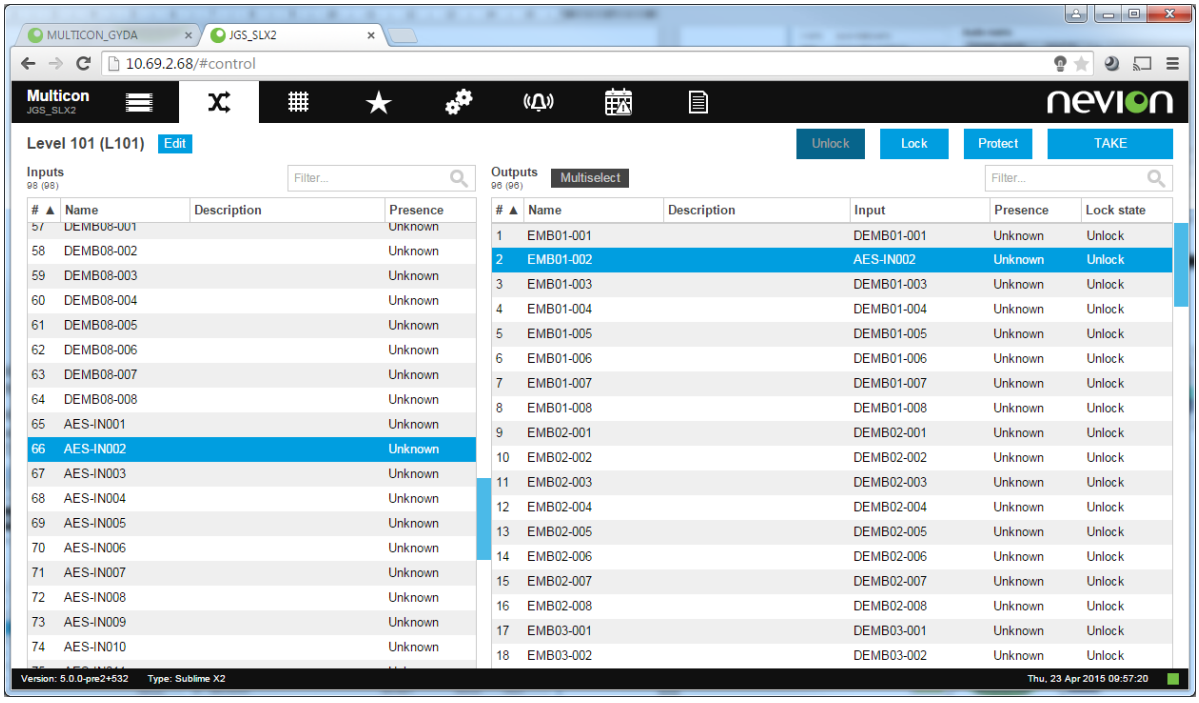


Figure 38 List view of level 101, AES input 2 embedded to stereo pair 2 on outgoing video.

9.1.7 Embedding and De-embedding from several sources

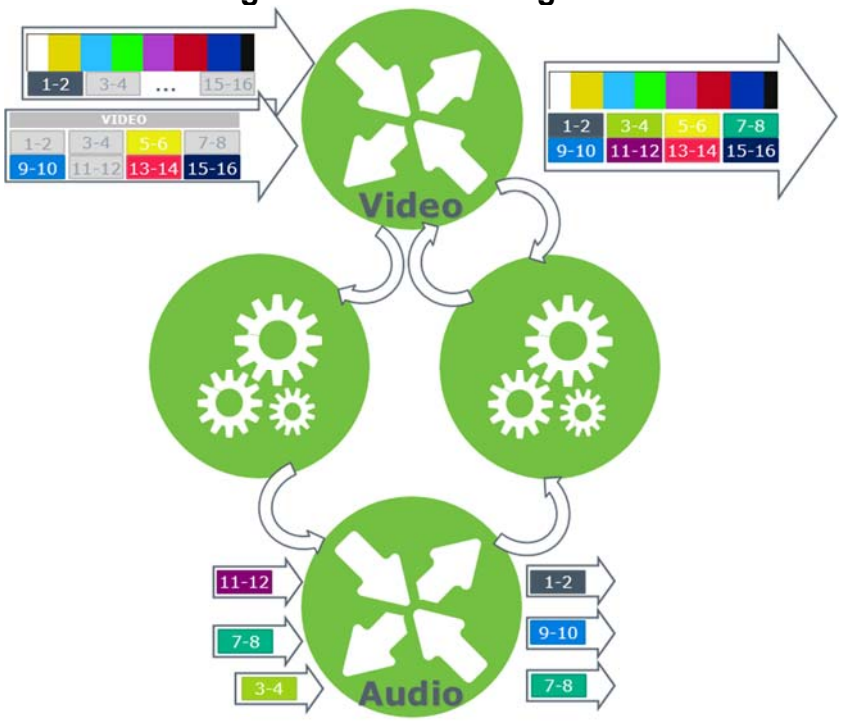


Figure 39 **Simultaneously embedding from two video channels and external sources, and de-embedding from two video channels to external sources. Two processing cores with embedding/de-embedding license needed.**

Following the examples above one can simultaneously do both embedding and de-embedding from several video sources and external sources. This requires two processing cores, both enabled with the embedding/de-embedding license as well as the SLX2-HW-AVPROC4 hardware option.

10 4K routing

By purchasing the 4K license this router can do quad-3G/4K routing. This means that all four SDI signal are switch at the same frame video. A new level is available for doing 4K routing. The router can be configured to be a combination of 4K ports and normal SDI ports.

10.1 4K port configuration

Configuration of 4K ports are done in the configuration pan for on the input and output.

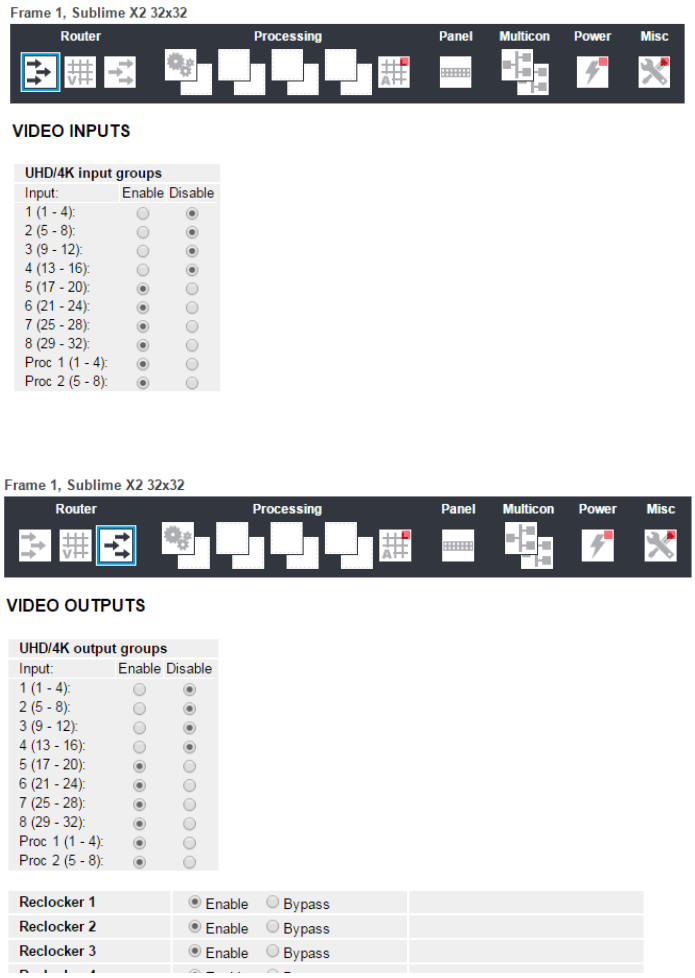


Figure 40

10.2 4K routing

4K video routing is done through the 4K level (L2). Only routing from and to port that is configured as 4K port is possible. If a routing from or to a port that is not 4K configured is applied to the system, the changes will not be accepted.

All port not configured as 4K must be routed from video level (L1). If a routing to a port that is 4K configured in video level is applied to the system, the changes will not be accepted. It is possible to route first input in a quad-SDI input to an SDI video output from the video level (L1).

In 4K level (L2):

- Routing from 4K input to 4K output is possible
- Routing from 4K input to non-4K output is not possible
- Routing from non-4K input to 4K output is not possible
- Routing from non-4K input to non-4K output is not possible

In video level (L1):

- Routing from 4K input to 4K output is not possible
- Routing from 1.st input in a 4K input to non-4K output is possible
- Routing from 2.nd input in a 4K input to non-4K output is not-possible
- Routing from 3.rd input in a 4K input to non-4K output is not-possible
- Routing from 4.th input in a 4K input to non-4K output is not-possible
- Routing from non-4K input to 4K output is not possible
- Routing from non-4K input to non-4K output is possible

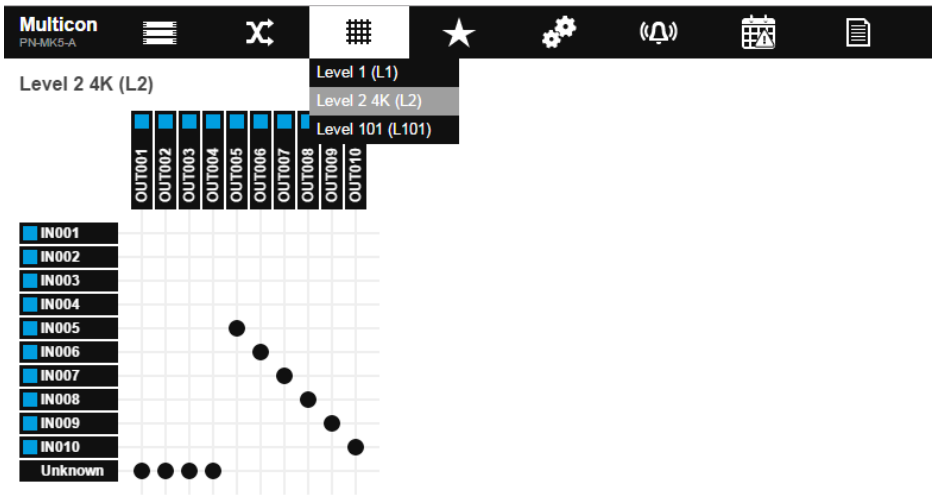


Figure 41

11 Maintenance

When exchanging hardware parts turn the product off by extracting the power inlet or use the internal power switch.

Following hardware parts can be exchanged on the product:

23628 SLX2-HW-RC

Hardware option for redundant Multicon controller to Sublime X2.

23629 SLX2-HW-RX32

Hardware option for redundant cross point to 32x32 Sublime X2 routers.

Product Warranty

The warranty terms and conditions for the product(s) covered by this manual follow the General Sales Conditions by Nevion, which are available on the company web site:

www.nevion.com

Appendix A Materials declaration and recycling information

A.1 Materials declaration

For product sold into China after 1st March 2007, we comply with the “Administrative Measure on the Control of Pollution by Electronic Information Products”. In the first stage of this legislation, content of six hazardous materials has to be declared. The table below shows the required information.

組成名稱 Part Name	Toxic or hazardous substances and elements					
	鉛 Lead (Pb)	汞 Mercury (Hg)	镉 Cadmium (Cd)	六价铬 Hexavalent Chromium (Cr(VI))	多溴联苯 Polybrominated biphenyls (PBB)	多溴二苯醚 Polybrominated diphenyl ethers (PBDE)
SLX2-3GHD3232-CP	O	O	O	O	O	O
2.2.1 SLX2-PWR-80	O	O	O	O	O	O
O: Indicates that this toxic or hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement in SJ/T11363-2006. X: Indicates that this toxic or hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement in SJ/T11363-2006.						

This is indicated by the product marking:

A.2 Recycling information

Nevion provides assistance to customers and recyclers through our web site http://www.nevion.com/. Please contact Nevion’s Customer Support for assistance with recycling if this site does not show the information you require.

Where it is not possible to return the product to Nevion or its agents for recycling, the following general information may be of assistance:

- Before attempting disassembly, ensure the product is completely disconnected from power and signal connections.
- All major parts are marked or labeled to show their material content.
- Depending on the date of manufacture, this product may contain lead in solder.
- Some circuit boards may contain battery-backed memory devices.