

# IQDANR SDI Advanced Noise Reducer



## Module Description

The IQDANR is an advanced noise reducer for SDI signals using recursive, semi-transversal, median and spatial filtering to provide powerful noise reduction capabilities.

Compressors demand extremely high quality inputs if artefacts are to be minimised. MPEG works by sending the differences between successive pictures. The compressor tries to encode these changes, using up valuable data capacity. With the powerful noise reduction and pre-processing of IQDANR a compressor can more fully utilise the available bandwidth.

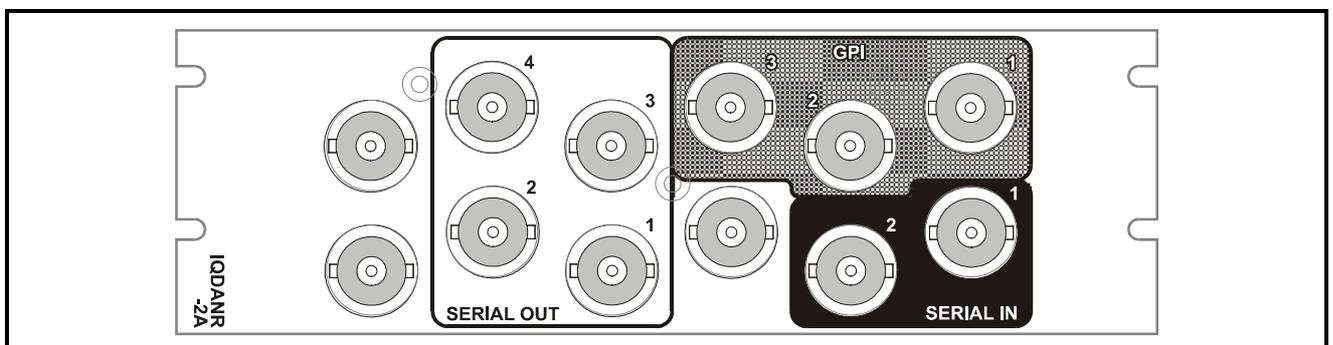
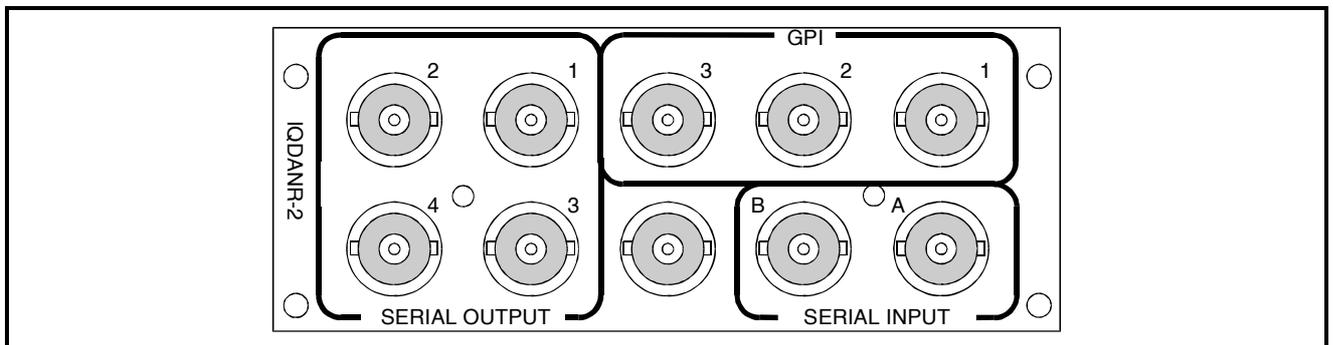
IQDANR also has a number of other features including test pattern generation, picture splitting facilities, and SMPTE-259M-C digital component inputs. The module provides its powerful noise reduction to 10-bit SDI video. For MPEG encoders, where 8-bit video is used, the IQDANR output can be rounded to 8 bits. The processing

includes recursive, semi-transversal, median and spatial filtering. Embedded audio or other ancillary data receives the same delay as the video, resulting in both audio and video being co-timed leaving the module.

A crystal locked output helps in reducing the incoming jitter. There are three general purpose inputs. There are user memories that allow for pre-programming of optimum noise reduction and Proc-Amp settings of various source materials. The IQDANR also comes with pre-defined pre-processing settings, so that for the user who is unfamiliar with programming his unit, by using the pre-defined settings, the module can be used successfully "from day one". The GPIs can be used to select the user memories or pre-defined settings amongst other options.

Most control features are accessible from the card edge.

## REAR PANEL VIEW



Versions of the module cards available are:

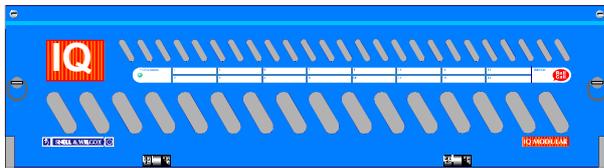
IQDANR-2      Advanced SDI Noise Reducer  
 IQDANR-2A    Advanced SDI Noise Reducer

Double width module  
 Double width module

**Note that there are two styles of rear panels available. They are not interchangeable between the two styles of enclosures. However, the cards may be fitted into any style of enclosure.**

**‘A’ Style Enclosure**

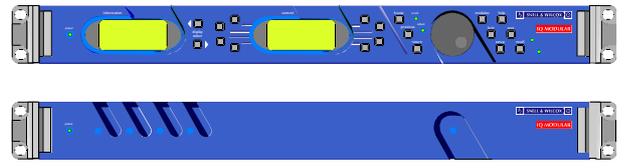
Rear panels **with** the suffix A may only be fitted into the ‘A’ style enclosure shown below.



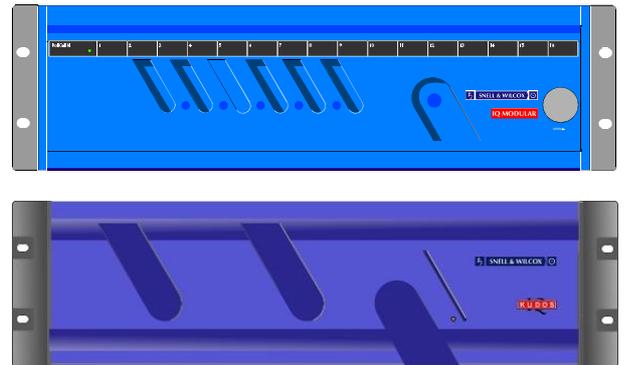
(Enclosure order codes IQH3A-E-O, IQH3A-E-P, IQH3A-N-O, IQH3A-N-P)

**‘O’ Style Enclosures**

Rear panels **without** the suffix A may only be fitted into the ‘O’ style enclosures shown below.

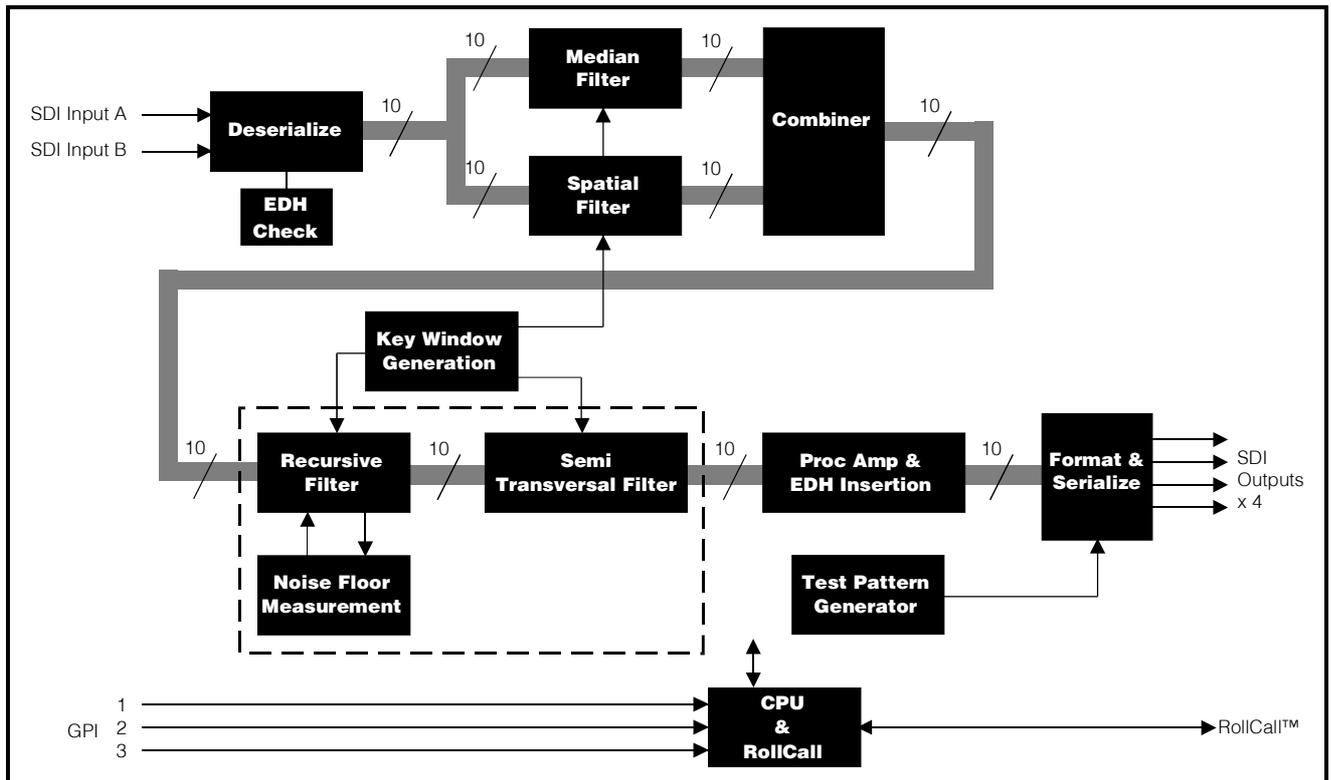


(Enclosure order codes IQH1S-RC-O, IQH1S-RC-AP, IQH1U-RC-O, IQH1U-RC-AP, Kudos Plus Products)



(Enclosure order codes IQH3N-O, IQH3N-P)

## BLOCK DIAGRAM



## Features

### Four filters

- Recursive filter, with unique filter biasing and motion algorithms,
  - Semi-Transversal filter, improving recursive filter performance,
  - Median filter, for impulse noise and drop-outs,
  - Spatial filter, for improved noise reduction.
  - Split screen and “horizontal repeat” for comparison, with optional border and choice of border colour.
  - Compensating delay for audio and other embedded data.
- Minimum 10 bit processing throughout the system.
- Proc. Amp: Y Gain, C Gain, Black Level Adjust, Picture Position, Y/C Delay.
- Pre-defined fixed settings for common types of noise.
- Crystal locked output to reduce high frequency input jitter.
- EDH extraction and status check.
- Full remote control facility using Snell and Wilcox proprietary “RollCall” system.
- Internal test pattern generation.
- Freeze frame.
- Automatic noise floor measurement.
- Automatic live (625 and 525) standards detection.
- Two SDI inputs.
- “Input Failure” options.
- OVD, OBD and ABD options for 525 outputs.
- Three GPI inputs.
- 8 bit rounding option for the output video.
- Vertical blanking data may be allowed through, blanked, or user configured on a line by line basis.
- 24 user memories, with ability to rename each of them.
- RollTrack implemented

## TECHNICAL PROFILE

### Features

#### Signal Inputs

Serial Digital ..... 2 x SDI  
 Standards ..... SMPTE 259M-C-1997  
 GPI ..... 3 x Closing Contact style inputs

#### Signal Outputs

Serial Digital ..... 4 x SDI Program  
 Standards ..... SMPTE 259M-C-1997

#### Card Edge Pre Processor Controls (also available via RollCall)

Pre-processor Processing.. Minimum 10 bit  
 Recursive Filter..... Motion Adaptive asymmetric temporal (frame) recursive filter. Three set levels with maximum noise reduction of up to 12dB. Bias adjustment  $\pm 3$  allows fine control in approximately 1dB steps. Filter: ON/OFF  
 Y: off, min, med, max  
 C:off, min, med, max, X-Color  
 Bias:-3 ... 0 ... 3  
 Threshold (Noise Floor): auto 1 to 15  
 Semi-Transversal Filter..... Operates on recursive filter output. Reduces absolute levels of noise trails in static revealed/concealed areas e.g. after scene changes up to 4.7dB. Can only be switched on when recursive filter is selected. Filter: ON/OFF  
 Median Filter:..... Adaptive spatial/temporal median. Filter: ON/OFF  
 Level: min1, min2, med3, med4, max5, max6  
 SpatialFilter:..... Spatial 2D median filter. Filter: ON/OFF  
 Y: off, min, med, max  
 C: off, min, med, max  
 Vertical Interval Data: ..... All thro', All blanked, Select individual lines. Individual line controls (or Group controls) for blanking/passing of VBI lines.  
 625 standard: 6-22/318-335  
 525 standard: 10-20/272-282  
 Embedded V flag Style(525):  
 OVD: Optional Video Data (unfiltered lines 1-9/264-272)  
 OBD: Optional Blanking Data (unfiltered lines 1-19/264-282)  
 ABD: Additional Blanking Data (unfiltered lines 1-21/264-284) (V flag as OBD.)  
 8 bit Rounding:..... 10 bit to 8 bit rounding using truncation error feedback.

EDH ..... Input error detection and handling. Status: none, ok, errors: individual or linked reset.  
 Split Screens:..... Allow split screen facilities on all four outputs to monitor effect of digital filtering applied to the key area only. Selection: off, top/bottom, left/right, h-repeat. Invert: inversion of selected Split Screen. Warning: key-window to be used off-air only! It is intended for adjustments and demonstrations purposes.  
 Border: ..... Separates the filtered from the unfiltered window. Selection: off, black, white.  
 Pattern: ..... Internal Test Patterns Black, EBU Bars, Y Ramp, UV Ramp, Y Sweep, UV Sweep, Bowtie, 100% Bars.  
 On Fail: ..... This sets the default mode for the unit when the input signal fails. Freeze, Black, EBU Bars, Y Ramp, UV Ramp, Y Sweep, UV Sweep, Bowtie, 100% Bars, GrabAlltp, InputChange.  
 Memory..... Read Fixed: Read pre-defined (fixed) memories or factory defaults. Read User: Read user defined memory (1...24). Save User: Store user defined selection in one of 24 used defined memories. Clear User: Clear the selected "user defined memory" to the default settings. Name User: Set name to a selected "user defined memory".  
 Proc. Amp..... Y Gain Adjust:  $\pm 6$ dB in 0.1dB steps. C Gain Adjust:  $\pm 6$ dB in 0.1dB steps. Black Level Adjust:  $\pm 100$ mV in 0.8mV steps. Horiz Y/C Adjust:  $\pm 444$ ns in 148ns steps. Picture Position Adjust:  $\pm 592$ ns in 148ns steps  
 Audio and Embedded Data Compensating delay so that Audio and embedded data remains in sync with processed video.  
**Functions Available via RollCall™ Only**  
 EDH logging  
 GPI configuration.  
 RollTrack™

**TECHNICAL PROFILE (cont.)****Specifications**

Serial Input Return Loss ..... Better than 15dB to 270 MHz  
 Maximum Input Cable length  
     Input A  
     > 200 m (PSF1/2 or equiv. cable)  
     Input B  
     > 125 m (PSF1/2 or equiv. cable)  
 Serial Output Level ..... 800 mV  $\pm$ 10%  
 Output Overshoot ..... < 70 mV  
 Output Return Loss..... Better than -15dB to 270 MHz  
 Output Signal Level ..... 800 mV  $\pm$ 10%

Output Overshot:..... < 70mV  
 Output Jitter ..... < 0.25UI)  
 Delay through the unit ..... 8 fields

**Power Consumption**

Module Power Consumption  
 13.4W max.

**OVERVIEW****Recursive Filter**

Recursive filters reduce noise by temporally averaging successive pictures. Utilising delays of exactly one picture or frame, noise can be reduced in stationary areas without loss of spatial (horizontal and vertical) resolution. Although temporal recursive filters offer considerable levels of noise reduction, sophisticated control logic is required to ensure that picture detail is preserved at higher noise settings.

In particular, analysis of the noise floor is necessary to set movement thresholds at levels which are just above the noise floor. At optimum settings this allows maximum noise reduction and simultaneously maximum sensitivity to movement. With the IQDANR, the recursive filtering of the Y and C is independent of each other.

**Recursive Y and C levels**

These settings change the amount of noise reduction for luminance (Y) and (C) by limiting the maximum level of noise reduction. The actual level of noise setting is dynamically adjusted on a pixel-by-pixel basis with regard to the noise setting for the same pixel in the previous frame. Other factors such as movement contribute to the current pixel setting. This mechanism ensures that the optimum level of noise reduction is applied to each pixel.

**Threshold**

This sets the threshold for the motion detector. The lowest level of 0 gives the greatest sensitivity to motion, but allows more noise to break through, while 15 gives the greatest noise reduction but can lead to excessive filtering of low-level textures. When this is set to "auto" the threshold is dynamically set to an appropriate value for the current input noise level.

**Auto Threshold Bias**

In auto threshold mode the noise detection algorithm may be given a subjective bias to give more or less noise reduction. Modifications of the bias should not be necessary under normal conditions.

**Semi Transversal Filter**

The semi-transversal filter is a uniquely patented design that operates in conjunction with the recursive filter to increase its effectiveness. Quite unlike traditional transversal filters it operates by selecting the most appropriate outputs from a chain of picture stores at the output of the recursive filter.

An algorithm is used to determine which of the stores contains the highest level of noise-reduced picture. The overall effect is to increase the amount of noise reduction in a typical picture. For example, moving objects cause the recursive filter to turn off at the edge of the moving object. This leads to a recurrence of noise which takes a number of frames to reduce to the defined user level. The semi-transversal filter is able to monitor the recurrence of noise and delay the output of the recursive filter up to a maximum of three frames. Operating on a pixel-by-pixel basis, the overall level of noise reduction in a typical picture is maintained at a more uniform level and is less dependent on movement.

As the semi-transversal filter complements the recursive filter, it cannot be utilised without the recursive filter. Effective at all recursive filter settings its operation can be seen as a reduction in the level of revealed noise trail following moving objects.

The semi-transversal filter operates in a fully automatic mode - there are no user adjustments required.

### Median Filter

Median filters can be effective at removing impulse noise. They operate by rank filtering pixels from an odd number of aperture points yielding the median value. The aperture set may utilise the surrounding pixels from the same field or more usually some combination of pixels from current and adjacent fields or frames.

When a pixel is judged to be in error it is replaced by the median value of the aperture set. Pixels judged not to be in error remain unaltered. The algorithm is therefore quite specific about the areas of the picture which are filtered.

An algorithm utilises both spatial and temporal gradient information to determine if the suspect pixel has impulse noise characteristics.

### Median Level

Six settings are provided for the median filter level control. The low setting provides modest filtering and has high rejection of false alarms caused by picture movement and texture etc.. The medium and high settings are biased increasingly towards removal of larger drop-outs but consequently may have a higher false alarm rate resulting in a general softening of the picture.

### Spatial Filter

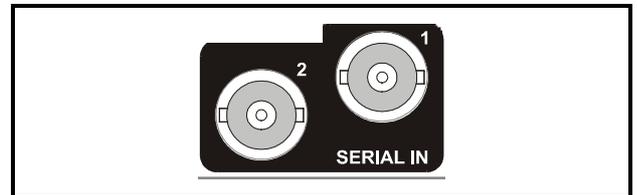
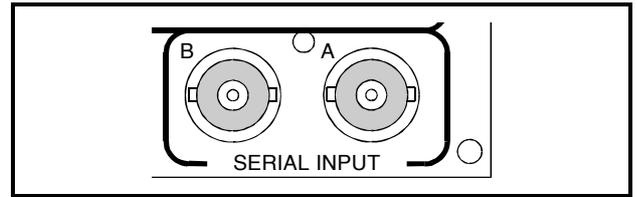
Spatial filtering typically involves filtering using an aperture that comprises of adjacent pixels from the same field period. Spatial median filters can be effective at suppressing impulse noise originating from film dust or small drop-outs. However they are also effective as Gaussian noise reduction filters.

### Y and C Spatial Levels

The spatial filter operates by median filtering a small kernel of adjacent pixels and then comparing the median filtered pixel level with the current pixel. The spatial filter has three level settings that are used to vary the comparison threshold and effectively set the balance between the level of noise suppression and detail preservation. Typically used in conjunction with other temporal based filters such as the recursive and transversal filters, spatial noise reduction can increase the overall noise reduction level.

SERIAL INPUT A and B

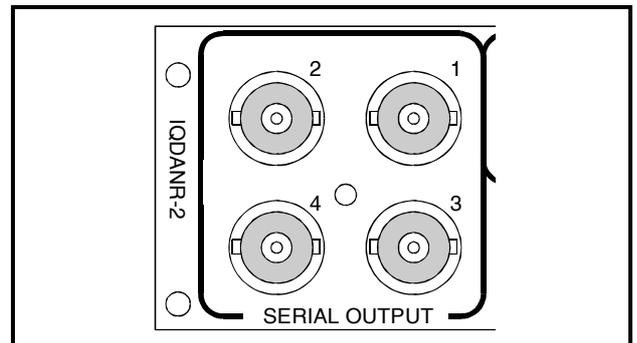
These are the two serial digital inputs to the unit made via BNC connectors, which terminates in 75 Ohms.



SERIAL OUTPUTS

These are the four isolated Serial Digital outputs of the unit via BNC connectors for 75 Ohms.

*Note that to aid compliance with EMC/RFI regulations, we recommend the use of high quality co-axial cable type BBCPSF1/2 or equivalent.*

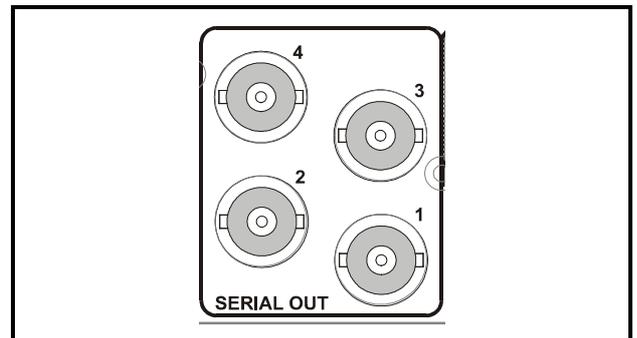


GPI

These three connectors are used for accepting GPI information (from mechanical switch contacts, relay contacts etc.) The resulting action that the unit takes may be programmed via RollCall.

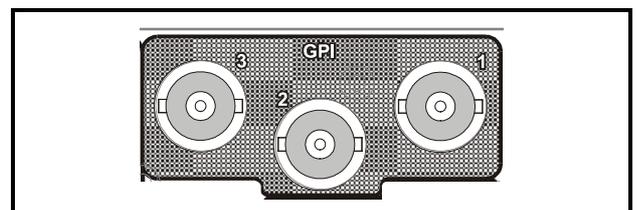
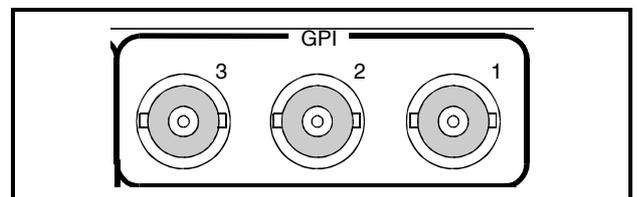
The GPI inputs have two user selectable modes of operation:

1. Latched: when the contact is closed the function is activated; when the contact is open, the function is de-activated.
2. Edge-triggered: with each open-to-closed trigger the GPI function is toggled between activated and de-activated.

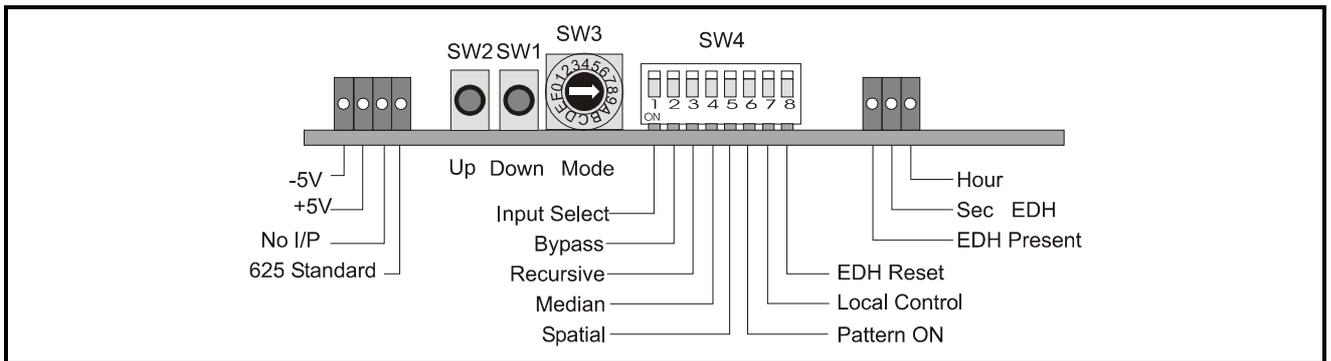


The functions that can be selected by GPI are:

Input Change
Freeze
Bypass
Bypass filters
Bypass Proc-amp
An internal pattern
Any user defined memory
Any pre-defined (fixed) memory



CARD EDGE CONTROLS

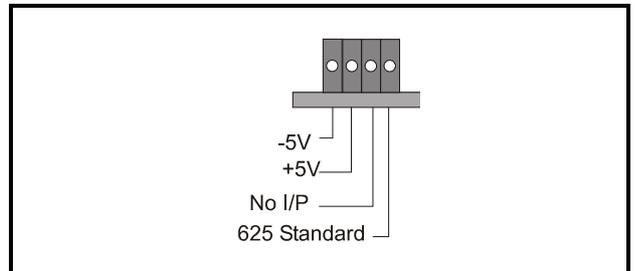


The unit will respond to both local and remote control, one system overriding the settings of the other. For cards using the RollCall™ remote control system, activating these switches will override the remote control settings. The RollCall™ control panel will then follow these settings.

LED INDICATORS

**+5V and -5V**

When illuminated these LED's indicate that the +5 V and -5 V supplies are present.

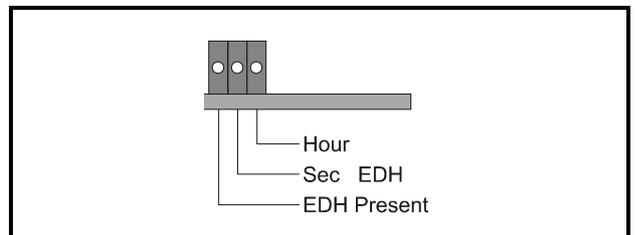


**No I/P**

The **No I/P** LED will be continuously illuminated when the unit is not receiving an input signal.

**625 Standard**

This LED will be illuminated when the incoming signal is a 625 standard. If the incoming signal is a 525 standard, the LED will be extinguished.



EDH Reporting

The **EDH Present** LED will be illuminated if EDH data is present on the incoming signal.

The **Hour** LED indicates that an error has occurred in the last hour and the **Sec** LED indicates that an error has occurred in the last second.

Note that SW4/8 resets these indicators.

Adjustment of the settings of the IQDANR is available either via card edge controls and/or via a more comprehensive remote control system using RollCall™

SWITCHES

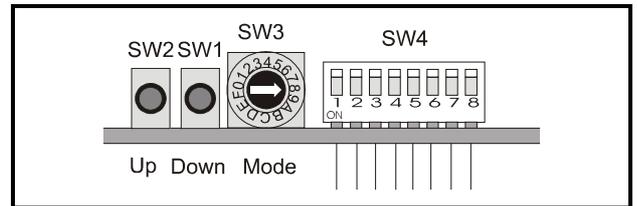
Two push buttons, a Hex switch and an 8 way DIL switch allow various functions and modes to be set.

The DIL switch SW4 selects a particular function and the Hex switch SW3 selects a mode or variable parameter.

The push buttons SW1, SW2 allow the value of the selected function/parameter to be adjusted.

The Mode select switch may select a mode or a parameter that may be adjusted.

**Note that to select the preset value both buttons should be pressed together.**



These switches allow the module to be operated when an active front panel is not available.

More detailed information about these functions will be found under *MENU DETAILS* starting on page 11.

FUNCTION AND MODE SELECTIONS

DIL SWITCH FUNCTIONS SW4

By setting these switches various modes of operation may be selected. (Down is ON and Up is OFF)

Position 1

This allows the SDI input to be selected. Setting this to ON provides selects SDI input B. Setting this to OFF SDI input A is selected.

Position 2

Setting to ON selects the **Bypass** mode. The input signal will pass through to the output unprocessed. A delay is automatically inserted that is equivalent to any previous processing delay so that the input to output delay is unchanged.

Position 3

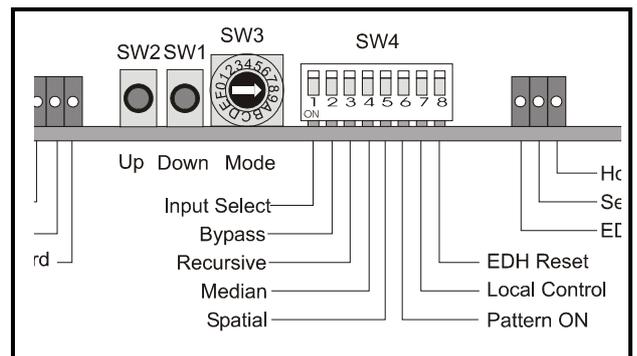
Setting this to ON enables the recursive and semi-transversal filters. The Y, C threshold and bias settings are unaffected by this switch.

Position 4

Setting this to ON enables the median filter. The median level is set to “med6” by this switch.

Position 5

Setting this to ON enables the Spatial filter. The Y and C levels are unaffected by this switch.



Position 6

When set to ON (Down) this allows the unit to produce a **test pattern** (selected using SW3) signal as an output.

When the test pattern is selected, the filters and the ProcAmp are bypassed.

Position 7

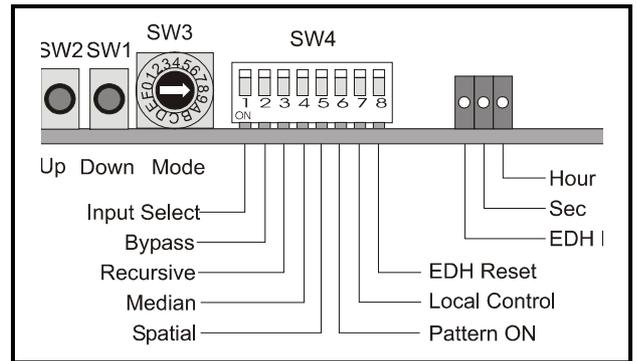
When set to ON (Down) this allows the unit to operate under **local control**.

The operation of the Local Control will be overwritten by the GPI control if there is a conflict in the selection.

*Note that in Main-frames where RollCall™ is not available this switch should be set to the ON position. This ensures that when the unit is powered-up the factory default settings of parameters not available as card edge adjustments, are loaded. When set to the UP position the card will power-up with the last settings sent by the remote control panel.*

Position 8

Setting this to ON, resets the EDH's Elapsed-Time count, as well as resetting the "Sec EDH" and "Hour EDH" LEDs.



## SW3

This HEX switch selects a parameter that may be adjusted with the push-buttons SW1 and SW2.

*Note that SW1 decreases a setting and SW2 increases a setting. Continual pressure on the button will cause the setting to change continuously, the rate of change increasing with time. Pressing both together sets functions to their default values.*

## Position 0

This allows the **Y** (luminance) recursive **noise reduction** to be adjusted. Level selections available are Off, Low, Medium and High.

Default setting is OFF.

## Position 1

This allows the **C** (chrominance) recursive **noise reduction** to be adjusted. Level selections available are Off, Low, Medium and High.

Default setting is OFF.

## Position 2

This allows the Threshold of the Recursive noise reduction to be adjusted. The available selections are: auto and 1 to 15. The default setting is auto.

## Position 3

This allows the applied Bias associated with the Automatic Threshold for Recursive noise reduction to be adjusted.

The available selections are: -3, -2, -1, 0, +1, +2, +3. The default setting is 0.

## Position 4

This allows the level of Luma Spatial noise reduction to be adjusted.

The available selections are: off, min, med and max. The default setting is off.

## Position 5

This allows the level of Chroma Spatial noise reduction to be adjusted.

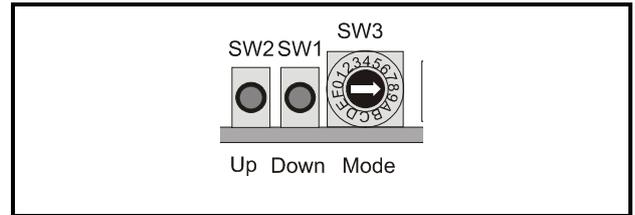
The available selections are: off, min, med and max. The default setting is off.

## Position 6

This allows the **Luminance gain** of the unit to be adjusted.

The overall range of adjustment is  $\pm 6$  dB in 0.1 dB steps.

Default setting is to the calibrated value of 0 dB



## Position 7

This allows the **Chrominance gain** of the unit to be adjusted.

The overall range of adjustment is  $\pm 6$  dB in 0.1 dB steps.

Default setting is to the calibrated value of 0 dB

## Position 8

This allows the **Black level** of the unit to be adjusted.

The overall range of adjustment is  $\pm 100$  mV in 0.8 mV steps.

Default setting is to the calibrated value of 0 mV.

## Position 9

This allows the **Picture Position** to be adjusted.

The overall range of adjustment is  $\pm 592$  ns in 148 ns steps.

Default setting is to the calibrated value of 0 ns.

## Position A

This allows the **YC Delay** to be adjusted.

The overall range of adjustment is  $\pm 444$  ns in 148 ns steps.

Default setting is to the calibrated value of 0 ns.

## Position B

This allows a **test pattern** to be selected as the output (in this order) from the following list:

Black  
EBU Bars  
Y ramp  
UV Ramp  
Y Sweep  
UV Sweep  
Bowtie  
100% Bars  
Default is to black.

## Position C

This selects the output when there is an Input Failure. The output selection, in this order is:

Freeze, Black, EBU Bars, Y Ramp, UV Ramp, Y Sweep, UV Sweep, Bowtie, 100% Bars, GrabAltIp, InputChange.

The default setting to EBU Bars.

**Position D**

This selects the Vertical Blanking Interval Data Configuration. The cycle using the UP button is all data through, all data blanked, user sel (i.e. user selection).

The default setting is all data through.

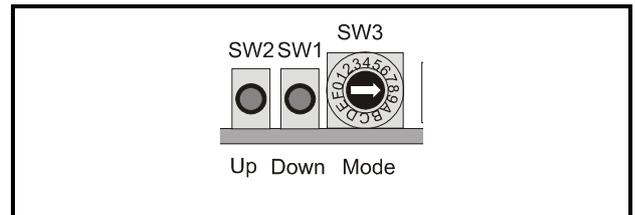
**Position E:**

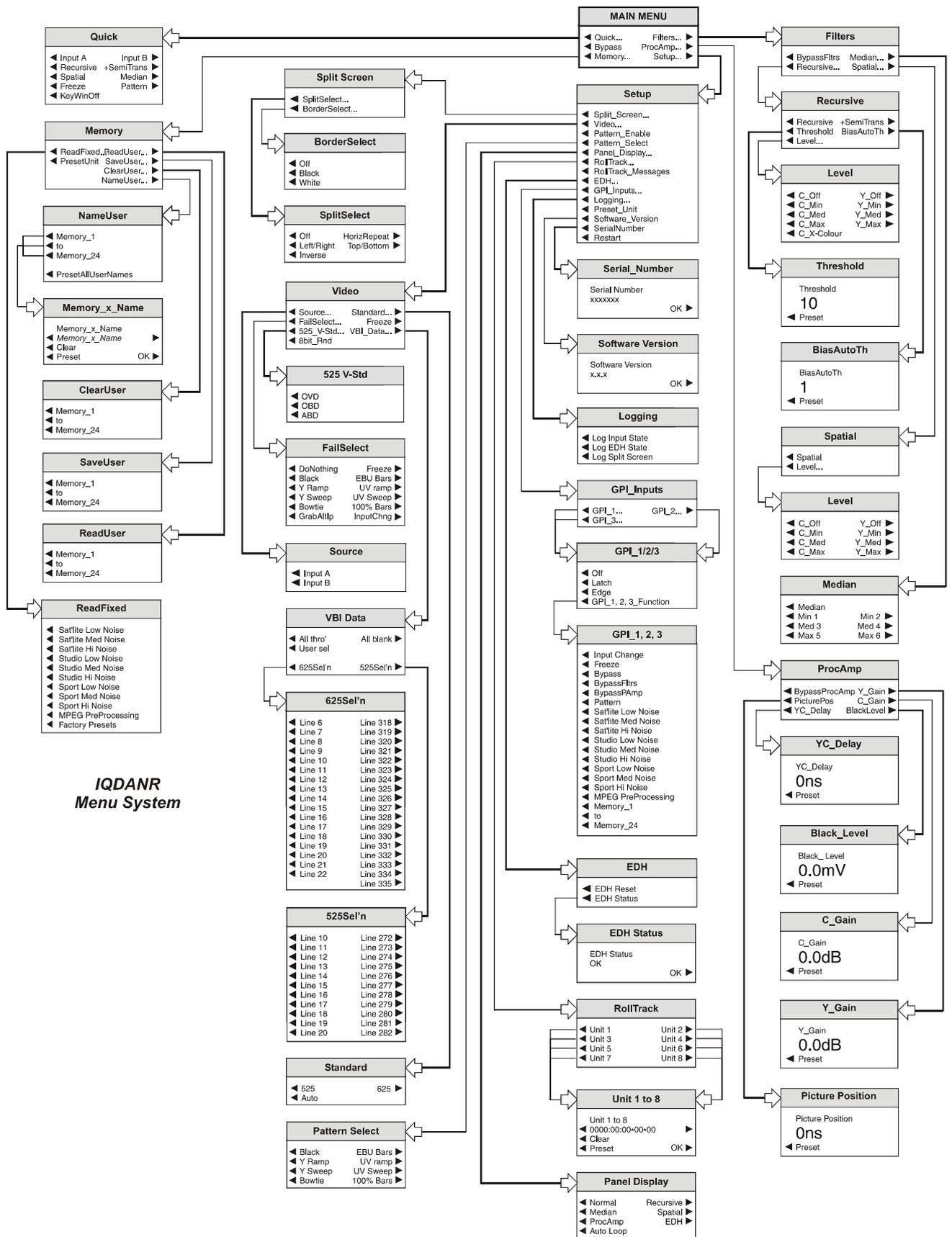
This selects the Monitoring capability on all of the outputs. The cycle using the UP button is off, freeze, h\_split (i.e. left/right), v-split (top/bottom), h-repeat.

The default setting is off.

**Position F**

In this position pressing SW1 and SW2 together sets all parameters to the **default/preset** conditions.





OPERATION FROM AN ACTIVE CONTROL PANEL

The card may be operated with an active control panel via the RollCall™ network. The menus available for this card are shown opposite and will appear in the Control display window.

Operational details for the remote control panel will be found in SECTION 1 of the Modular System Operator's Manual.

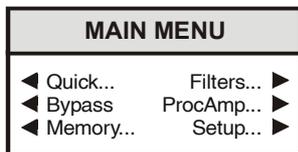
**MENU DETAILS**  
(see IQDANR Menu System opposite)

**MAIN MENU**

The main, or top level menu allows various sub-menus to be selected by pressing the button adjacent to the required text line.

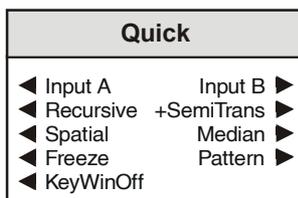
*Note that where a menu item is followed by three dots (...) this indicates that a further sub-menu may be selected.*

Whenever a menu item is selected the parameters of that selection will be displayed in the **Information** window of the front panel. Where the selection is purely a mode selection and does not enable a sub-menu, the text will become reversed (white-on-black) indicating that the mode is active. If the mode is not available for selection the text will remain normal.



**◀ Quick...**

This item provides a fast path to enable or disable specific and high priority functions. This could also be describes as the “panic” menu. When a filter needs turning on or off, a different input needs to be selected, the key-window has been left on, etc., the panic can be resolved quickly using this screen.



**◀ Input A** **Input B ▶**

This item allows either input A or input B to be selected as the input to the unit.

*Note that only one input may be selected and it is not possible to deselect both inputs.*

**◀ Recursive**

This item allows the Recursive Noise filtering to be enabled. The level of Luminance and Chrominance recursive filtering will be at the level set in the related “level” menu.

The preset for this function is to not enabled.

**+SemiTrans ▶**

This item allows Spatial Transversal Noise filtering in addition to Recursive Noise filtering to be enabled.

*Note that this item can only be enabled if the Recursive Noise filtering item is already enabled.*

The preset for this function is to not enabled.

**◀ Spatial**

This item allows the Spatial Noise filtering to be enabled. The level of Luminance and Chrominance Spatial filtering will be at the level set in the related “level” menu.

The preset for this function is to not enabled.

**Median ▶**

This item allows the Median Noise filtering to be enabled.

The preset for this function is to not enabled.

**◀ Freeze**

This item may be used to give a frozen picture of the current output from the module.

The preset for this function is to not enabled

**Pattern ►**

When enabled the pattern-generator's output (as opposed to either SDI inputs) becomes the output of the module.

Note that the pattern bypasses the filters and ProcAmp controls.

**◀ KeyWinOff**

When enabled this item provides a quick method of ensuring that the video processing in occurring throughout the entire active field, and thus over-writes the Monitor's key-window selection.

The preset for this function is to not enabled.

**◀ Bypass**

When enabled the input signal will pass through to the output unprocessed.

A delay is automatically inserted that is equivalent to any previous processing delay so that the input to output delay is unchanged.

**◀ Memory...**

Memory	
◀ ReadFixed.ReadUser...	►
◀ PresetUnit SaveUser...	►
ClearUser...	►
NameUser...	►

The memory function provides the path to the menu that deals with both the pre-set and the user defined memories. The "User Defined Memories", with the exception of "preset unit" or "factory presets", store the settings for the filters, video, proc-amp, bypass modes, VBI, monitoring, and logging.

The "fixed memory" settings only contain preset filter settings. Recalling a "fixed memory setting" will, therefore, not effect the status of the video, proc-amp, bypass modes, VBI, monitoring or logging.

Preset unit does not effect Input Source, RollTrack, RollLog, Memory settings or Names whereas factory defaults effects everything.

**◀ ReadFixed...**

This item is used to select one of the pre-defined (fixed) memory settings.

ReadFixed	
◀ Sat'lite Low Noise	
◀ Sat'lite Med Noise	
◀ Sat'lite Hi Noise	
◀ Studio Low Noise	
◀ Studio Med Noise	
◀ Studio Hi Noise	
◀ Sport Low Noise	
◀ Sport Med Noise	
◀ Sport Hi Noise	
◀ MPEG PreProcessing	
◀ Factory Presets	

The options are:

Satellite low noise, satellite medium noise, satellite high noise, studio low noise, studio medium noise, studio high noise, sport low noise, sport medium noise, sport high noise, MPEG pre-processing and Factory Presets.

The default for this function is Factory Presets.

**◀ PresetUnit**

This item will return all functions to the factory preset condition.

**ReadUser... ►**

This item may be used to set the unit's current settings to those stored in one of the 24 user-defined memory locations.

ReadUser	
◀ Memory_1	
◀ to	
◀ Memory_24	

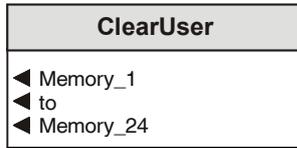
**SaveUser... ►**

This item is used to save the current status of the Filters, Proc-Amp, etc, to one of the 24 user defined memory locations.

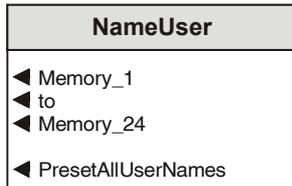
SaveUser	
◀ Memory_1	
◀ to	
◀ Memory_24	

**ClearUser... ▶**

This item is used to reset individual user defined memory locations to their default values.

**NameUser... ▶**

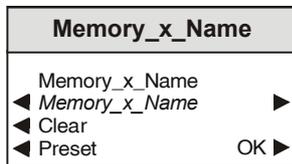
This item is used to give a user-friendly name to a user defined memory location.



This will reveal a list of the 24 memory locations that may be given a specific name. To rename a memory location when operating in a particular standard, select:

Select the memory location to be renamed e.g.

◀ Memory\_1



To compile/edit the text the right ▶ and left ◀ buttons adjacent to the upper text line in the menu should be used to select the character position in the text and the spinwheel used to select the character.

The ◀ **Clear** function blanks out the selected character.

The ◀ **Preset** function loads the default text.

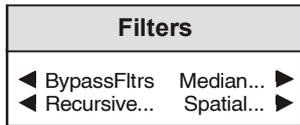
**O.K.** ▶ saves the caption text and returns to the main menu.

**◀ PresetAllUserNames**

Selecting this item will return all memory location names to their default names.

**Filters... ▶**

This item allows adjustments and settings to be made to the filters.

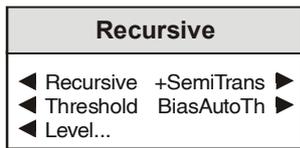


**◀ BypassFltrs**

When enabled the input signal will pass through to the output unprocessed. A delay is automatically inserted that is equivalent to any previous processing delay so that the input to output delay is unchanged.

**◀ Recursive...**

This item will reveal a menu for setting up the recursive filtering conditions.



**◀ Recursive**

This item allows the Recursive Noise filtering to be enabled.

**◀ Threshold**

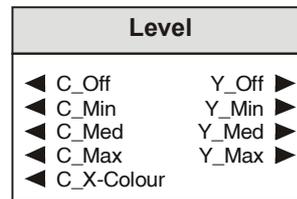
This function allows the sensitivity to noise of the motion detector to be set using the spinwheel. The value will be shown in the numeric display.



The lowest level of 0 gives the greatest sensitivity to motion, but allows more noise to break through, while 15 gives the greatest noise reduction but can lead to excessive filtering of low-level textures. When this is set to "auto" the threshold is dynamically set to an appropriate value for the current input noise level. The preset for this function is Auto.

**◀ Level...**

This item allows the level of Chrominance and Luminance filtering to be set.



The Luminance level may be set to Off, Minimum, Medium or Maximum.

The Chrominance level may be set to Off, Minimum, Medium, Maximum or X-Color

X-Color = Cross Color

In this mode some reduction of cross colour can be achieved in addition to suppression of Hanover bars.

This mode could be used where the picture content has a lot of high frequency diagonal luminance. e.g. Small graphics, captions, scrolling titles, chequered patterning etc.

Preset is to Off.

**+SemiTrans ▶**

This item allows Spatial Transversal Noise filtering in addition to Recursive Noise filtering to be enabled.

*Note that this item can only be enabled if the Recursive Noise filtering item is already enabled.*

The preset for this function is to not enabled.

**BiasAutoTh ▶**

This function allows (when in auto Threshold mode) to give a subjective bias, enabling more or less noise reduction.

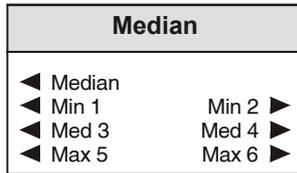


Modifications of the bias should not be necessary under normal conditions. The allowed range is from -3 (less noise reduction) to +3 (more noise reduction).

The preset for this function is 0.

**Median... ►**

This item will reveal a menu for setting up the Median filtering conditions.

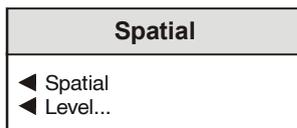
**◀ Median**

This item allows the Median noise filtering to be enabled. (Text Highlighted)

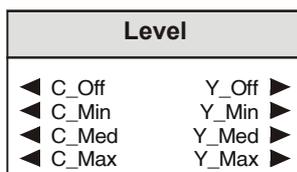
The level of Median Filtering may be set to Minimum 1, Minimum 2, Medium 1, Medium 4, Maximum 5 and Maximum 6.

**Spatial... ►**

This item will reveal a menu for setting up the Spatial filtering conditions.

**◀ Spatial**

This item allows the Spatial noise filtering to be enabled. (Text Highlighted)

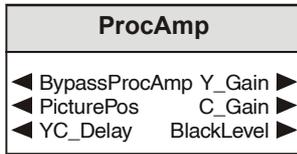
**◀ Level**

The Luminance level may be set to Off, Minimum, Medium or Maximum.

The Chrominance level may be set to Off, Minimum, Medium or Maximum.

**ProcAmp... ▶**

This function allows level and timing adjustments to be made to the video signal.



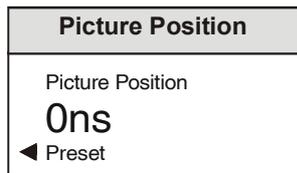
**◀ BypassProcAmp**

When enabled, the video input is passed through the module unaffected by the module's procamp controls.

The preset for this function is to disabled.

**◀ PicturePos**

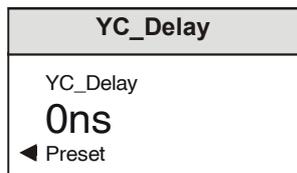
This item allows the timing of the picture position relative to the normal value, to be adjusted.



By using the spinwheel the timing may be adjusted by  $\pm 592$  ns in 148 ns steps

**◀ YC\_Delay**

This item allows the timing of the chrominance signal relative to the luminance signal to be adjusted, (i.e. Y to Cb/Cr timing) in nanoseconds.



By using the spinwheel the timing may be adjusted by  $\pm 444$  ns in 148 ns steps.

**Y\_Gain ▶**

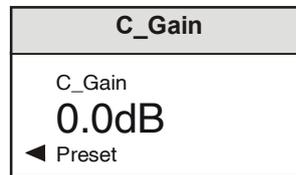
This item allows the gain of the luminance signal to be adjusted.



By using the spinwheel the gain may be adjusted by  $\pm 6$  dB in steps of 0.1 dB.

**C\_Gain ▶**

This item allows the gain of the chrominance signal to be adjusted.



By using the spinwheel the gain may be adjusted by  $\pm 6$  dB in steps of 0.1 dB.

**BlackLevel ▶**

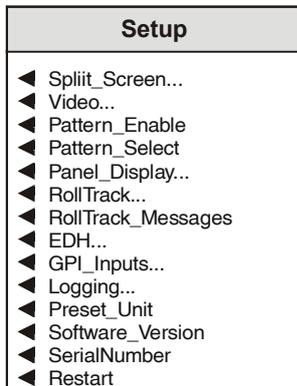
This item allows the Y pedestal or black level to be adjusted.



The pedestal may be adjusted by  $\pm 100$  mV in steps of 0.8 mV.

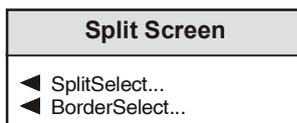
**Setup... ▶**

This item allows parameters to be configured.



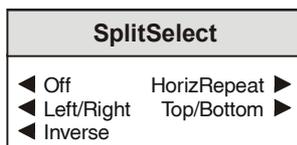
**◀ Split\_Screen...**

To enable the effects of noise reduction to be easily seen this function allows the screen to be split into 2 halves either left/right or top/bottom. One half will show the picture with noise reduction and the other half without noise reduction.



**◀ SplitSelect...**

This item allows the way the screen is split.



**◀ Off**

This will disable the split screen function.

**◀ Left/Right**

When enabled the screen will be split into two equal sections separated by a vertical line.

*Note that if the Off option is selected in the BorderSelect menu, the separating line will not be seen.*

The processed picture will occupy the right-hand section of the screen and the unprocessed picture will occupy the left-hand side section.

**◀ Inverse**

When Inverse is enabled the processed half of the screen becoming the unprocessed half, and vice versa. It serves no function if Split Screen is set to Off.

The preset value is Off.

**HorzRepeat ▶**

When enabled this function performs a horizontal repeat so that the left half of the picture is repeated on the right half of the picture. One half of the picture is processed and the other half remains unprocessed.

**Top/Bottom ▶**

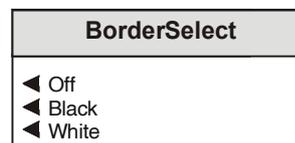
When enabled the screen will be split into two equal sections separated by a horizontal line.

*Note that if the Off option is selected in the BorderSelect menu, the separating line will not be seen.*

The processed picture will occupy the bottom section of the screen and the unprocessed picture will occupy the top section.

**◀ BorderSelect...**

This function allows a colour border to separate the processed and the unprocessed part of the picture when using the split screen function.



Options are:

Off No border between the processed and unprocessed image.

Black A black border between the processed and unprocessed image.

White A white border between the processed and unprocessed image.

The preset for the border is Off.

*The separating line will have the same color as that selected via the BorderSelect menu, i.e. Black or white. Note that if the Off option is selected the separating line will not be seen.*

◀ Video...

This item allows various parameters to be setup for the video signal.

Video	
◀ Source...	Standard... ▶
◀ FailSelect...	Freeze ▶
◀ 525_V-Std...	VBI_Data... ▶
◀ 8bit_Rnd	

◀ Source...

This item allows either input A or input B to be selected as the input to the unit.

Source
◀ Input A
◀ Input B

*Note that only one input may be selected and it is not possible to deselect both inputs.*

◀ FailSelect...

This sets the default mode for the unit when the input signal fails.

FailSelect	
◀ DoNothing	Freeze ▶
◀ Black	EBU Bars ▶
◀ Y Ramp	UV ramp ▶
◀ Y Sweep	UV Sweep ▶
◀ Bowtie	100% Bars ▶
◀ GrabAltIp	InputChng ▶

The options may be selected from the above list.

◀ Grab AltIp

When selected the unit will grab a frozen picture from the other input if the selected input fails.

InputChng ▶

When selected the unit will use the other input if the selected input fails.

◀ 525\_V\_Std...

The module generates the TRS codes for the outgoing signal. With 525 line standards, these are options for the TRS codes.

525 V-Std
◀ OVD
◀ OBD
◀ ABD

This module allows the options to be chosen. The embedded V-flag style options are

OVD:	Optional Video Data, unfiltered lines 1-9/264-272
OBD:	Optional Blanking Data, unfiltered lines 1-19/264-282
ABD:	Additional Blanking Data, unfiltered lines 1-21/264-284 V flag as OBD.

Standard... ▶

This item is used to specify the line standard of the signal to be processed.

Standard	
◀ 525	625 ▶
◀ Auto	

Selecting **525** insists that the incoming signal is processed as a signal with 525 lines per frame.

Selecting **625** insists that the incoming signal is processed as a signal with 625 lines per frame.

**Auto** enables the unit to determine the standard of the incoming signal and to process it accordingly.

The preset for this function is auto.

Freeze... ▶

This function is used to give a frozen picture of the current output from the module and toggles between enabled and disabled.

The preset for this function is Off.

**VBI\_Data... ▶**

This function is used to select which lines of the Vertical Blanking Interval are to be passed through unprocessed and which ones are to be blanked.

VBI Data	
◀ All thro' ▶	All blank ▶
◀ User sel ▶	
◀ 625Sel'n ▶	525Sel'n ▶

◀ **AllThro'**

When enabled this will Pass through all VBI data unprocessed.

◀ **User Sel**

When enabled this will blank only selected lines of VBI data, as selected by the User. It selects the 625 or 525 configuration depending on the video standard of the signal being processed.

The preset for these functions is All-Thro'.

◀ **625Sel'n** (625 line standard signals)

625Sel'n	
◀ Line 6 ▶	Line 318 ▶
◀ Line 7 ▶	Line 319 ▶
◀ Line 8 ▶	Line 320 ▶
◀ Line 9 ▶	Line 321 ▶
◀ Line 10 ▶	Line 322 ▶
◀ Line 11 ▶	Line 323 ▶
◀ Line 12 ▶	Line 324 ▶
◀ Line 13 ▶	Line 325 ▶
◀ Line 14 ▶	Line 326 ▶
◀ Line 15 ▶	Line 327 ▶
◀ Line 16 ▶	Line 328 ▶
◀ Line 17 ▶	Line 329 ▶
◀ Line 18 ▶	Line 330 ▶
◀ Line 19 ▶	Line 331 ▶
◀ Line 20 ▶	Line 332 ▶
◀ Line 21 ▶	Line 333 ▶
◀ Line 22 ▶	Line 334 ▶
	Line 335 ▶

Selecting lines from this list will blank the VBI data on that line.

If the line is unselected this will allow the VBI data on that line to be passed through unprocessed.

Preset is no lines selected.

**All blank ▶**

When selected all VBI data lines will be blanked.

(525 line standard signals) **525Sel'n ▶**

525Sel'n	
◀ Line 10 ▶	Line 272 ▶
◀ Line 11 ▶	Line 273 ▶
◀ Line 12 ▶	Line 274 ▶
◀ Line 13 ▶	Line 275 ▶
◀ Line 14 ▶	Line 276 ▶
◀ Line 15 ▶	Line 277 ▶
◀ Line 16 ▶	Line 278 ▶
◀ Line 17 ▶	Line 279 ▶
◀ Line 18 ▶	Line 280 ▶
◀ Line 19 ▶	Line 281 ▶
◀ Line 20 ▶	Line 282 ▶

Selecting lines from this list will blank the VBI data on that line.

If the line is unselected this will allow the VBI data on that line to be passed through unprocessed.

Preset is no lines selected.

◀ **8bit\_Rnd**

When selected, 10 bit to 8 bit rounding, using truncation error feedback is enabled.

This is only done at the output stage of the module so signal processing is maintained at 10 bits or higher until the output stage. Use of this facility may be preferable as some systems truncate the video to eight bits. Rounding to 8 bits upstream of such systems may improve the quality of the picture. The default status is 8 bit rounding off.

◀ **Pattern\_Enable**

When this item is enabled the pattern chosen from the **Pattern\_Select** item below will become the output signal.

◀ **Pattern\_Select...**

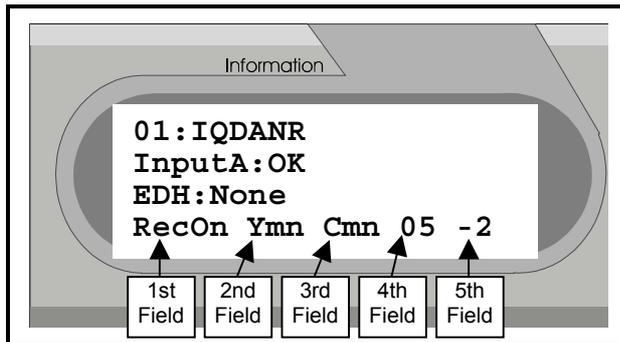
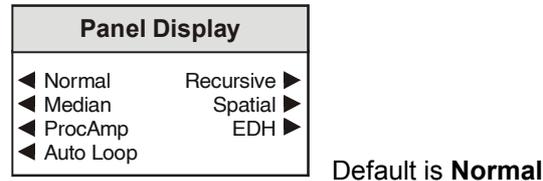
When the **Pattern\_Enable** item is enabled the pattern-generator's output (as opposed to either SDI inputs) becomes the output of the module.

Pattern Select	
◀ Black ▶	EBU Bars ▶
◀ Y Ramp ▶	UV ramp ▶
◀ Y Sweep ▶	UV Sweep ▶
◀ Bowtie ▶	100% Bars ▶

The pattern may be chosen from the above list. *Note that the pattern function bypasses the filters and ProcAmp controls.*

## ◀ Panel Display

This function enables the selection of data that is viewed in the information window.



The following options are available:

### ◀ Normal

This indicates which filters have been enabled. The codes indicating the different filters are:

REC: Recursive  
 TRN: Semi-Transversal  
 MED: Median  
 SPA: Spatial

### Recursive ▶

This indicates the status of the recursive filter.

The first field will be either RecOn or RecOf, indicating whether or not the recursive filter has been enabled.

The second field will be Yof, Ymn, Ymd or Ymx indicating whether the luminance setting is off, minimum, medium or maximum.

The third field will be either Cof, Cmn, Cmd, Cmx or Cxc indicating whether the chrominance has been set to off, minimum, medium, maximum or cross-colour.

The fourth field will be either A00 to A15, indicating that the threshold has been set to Automatic, or a number from 00 to 15, indicating the fixed threshold that has been selected.

The fifth field will be a number from -3 to +3, indicating the selected automatic-threshold-bias.

### ◀ Median

This indicates the status of the median filter.

The first field will be either MedOn or MedOff, indicating whether or not the median filter has been enabled.

The second field will be YCmin1, YCmin2, YCmed3, YCmed4, YCmax5 or YCmax6, indicating the strength of the median filtering of both luminance and chrominance.

### Spatial ▶

This indicates the status of the spatial filter.

The first field will be either SpatOn or SpatOff, indicating whether or not the spatial filter has been enabled.

The second field will be either Yoff, Ymin, Ymed, or Ymax, indicating the strength of the spatial filtering of the luminance.

The third field will be Coff, Cmin, Cmed, or Cmax, indicating the strength of the spatial filtering of the chrominance.

### ◀ ProcAmp

This gives a partial status of the ProcAmp.

The first field is the Y-Gain in dB. It will be a number ranging from -6.0(dB) to +6.0(dB).

The second field is the C-Gain in dB. It will be a number ranging from -6.0(dB) to +6.0(dB).

The third field is the Black-Level in mV. It will be a number ranging from -100.0(mV) to +100.0(mV).

### EDH ▶

This gives number of Error Seconds since the last EDH reset.

This field shows the elapsed time since the last reset (or power on) and is of the format hour:minute:second.

The elapsed time has a maximum duration of 99 hours.

◀ Auto Loop

This results in the panel display sequencing through all of the (above) panel display options. One display option is held for ten seconds before it moves on the next option.

◀ RollTrack

This function allows the value of the delay time produced by this module to be sent, via the RollCall™ network, to audio delay units connected on the same network. This enables compatible audio delay units to produce an audio delay dependent on this and other similar units. The audio delay unit will dynamically follow or track the received delay-time information allowing processed video signals to be timed correctly with audio signals. This automatic tracking system via the RollCall™ network is call **RollTrack**.

*For more detailed information, see the RollTrack section (Appendix) at the end of this manual.*

This menu allows the destination unit to be selected.

RollTrack	
◀ Unit 1	Unit 2 ▶
◀ Unit 3	Unit 4 ▶
◀ Unit 5	Unit 6 ▶
◀ Unit 7	Unit 8 ▶

**Unit 1-8**

This item allows the address of the selected destination unit to be set.

Unit 1 to 8	
Unit 1 to 8	
◀ 0000:00:00*00*00 ▶	
◀ Clear	
◀ Preset	OK ▶

To change the address the right ▶ and left ◀ buttons adjacent to the upper text line in the menu should be used to select the character position in the text and the spinwheel used to select the character.

The ◀ **Clear** function blanks out the selected character.

The ◀ **Preset** function loads the default text.

**O.K.** ▶ saves the address and returns to the previous menu.

*For full details of the RollCall command numbers for specific units please contact your local Snell & Wilcox agent.*

The full network address has five sets of numbers.

For example: 0000:10:01\*14\*51

The first set (0000) is the network segment code number

The second set (10) is the number identifying the (enclosure/mainframe) unit

The third set (01) is the slot number in the unit

The fourth set (14) separated by an \* is the channel number.

*Note that only channel numbers 14, 15, 16 & 17 should be used for audio delay cards.*

The fifth set (51) is the board type identification.

Once a destination address for a unit has been set the OK function will return to the unit menu to allow another address to be set if required.

The ID entered must match the receiving units own ID or else the command will be ignored. If the ID value is set to 00, the receiving unit does not perform an ID match and will always accept the incoming command.

The **Delay...** menu of the IQBDAD, for example, should then be selected and then select **Auto**.

The unique identification of the destination unit for various modules is as follows:

Module	ID
IQBADC.....	51
IQBDAC.....	52
IQBAAD.....	53
IQBDAD.....	54
IQBSYN.....	89
IQBADCD.....	107

And for this module

IQDANR .....	179
--------------	-----

◀ RollTrack\_Messages

When enabled a warning will be displayed if the communication link is unsuccessful.

**◀ EDH**

This selection reveals a sub-menu that allows various EDH parameters to be enabled.

EDH
◀ EDH Reset ◀ EDH Status

**◀ EDH Reset**

Selecting this function will reset the EDH error count and the timer shown in the information window, to zero.

**◀ EDH Status**

When this function is enabled (text reversed) the display will indicate one of the following messages:

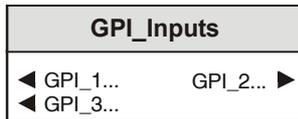
OK  
None  
Errors

EDH Status
EDH Status OK OK ▶

◀ **GPI\_Inputs**

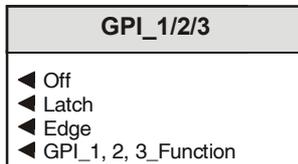
The three GPI connectors are used for accepting GPI information (from mechanical switch contacts, relay contacts etc.) The resulting action that the unit takes may be selected from this menu.

The required GPI input should be selected from the menu:



◀ **GPI\_1, 2, 3**

The GPI input has four user selectable modes of operation:



◀ **Off**

Function inactive

◀ **Latch**

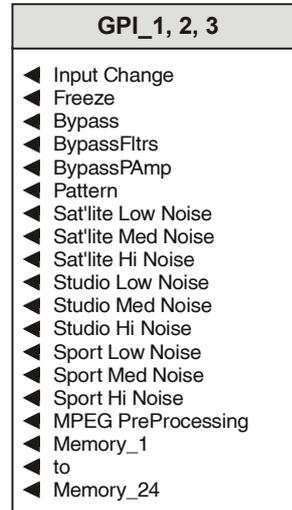
When the contact is closed the function is activated; when the contact is open, the function is de-activated.

◀ **Edge**

(Edge-triggered) With each open-to-closed trigger the GPI function is toggled between activated and de-activated.

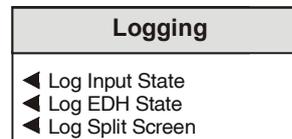
◀ **GPI\_1, 2, 3\_Function**

The action resulting from the selected GPI input being activated may be programmed from the following list:



◀ **Logging**

If a logging device is attached to the RollCall™ network, information about various parameters can be made available to such a device.



Selecting this item reveals a display that allows information about three parameters to be made available for logging.

◀ **Log Input State**

When activated, a change of input signal condition will be available for the logging device.

◀ **Log EDH State**

When activated, EDH error reports will be available for the logging device.

◀ **Log Split Screen**

When activated, a change of the Split Screen condition will be available for the logging device.

**◀ Preset Unit**

Selecting this item sets all adjustment functions that include a preset facility, to their preset values. Note that this is a momentary action and the text will not become reversed.

**◀ Software Version**

Software Version
Software Version x.x.x
OK ▶

Selecting this item reveals a display showing the version of the software fitted in the module. Select OK to return to the Setup Menu.

**◀ Serial Number**

Serial_Number
Serial Number xxxxxxx
OK ▶

Selecting this item reveals a display showing the serial number of the module. Select OK to return to the Setup Menu.

**◀ Restart**

This will reboot the unit simulating a power-down power-up cycle restoring power-up settings.

## MENU DETAILS via PC RollCall REMOTE CONTROL

### Quick

This screen provides a fast path to enable or disable specific and high priority functions. This could also be described as the “panic” menu. When a filter needs turning on or off, a different input needs to be selected, the key-window has been left on, etc. the panic can be resolved quickly using this screen.

#### Input A, Input B

This item allows either input A or input B to be selected as the input to the unit.

Note that only one input may be selected and it is not possible to deselect both inputs.

#### Recursive

This item allows the Recursive Noise filtering to be enabled.

The level of Luminance and Chrominance recursive filtering will be at the level set in the related “level” menu.

The preset for this function is to not enabled.

#### +Spatial Transversal

This item allows Spatial Transversal Noise filtering in addition to Recursive Noise filtering to be enabled.

*Note that this item can only be enabled if the Recursive Noise filtering item is already enabled.*

The preset for this function is to not enabled.

#### Median

This item allows the Median Noise filtering to be enabled.

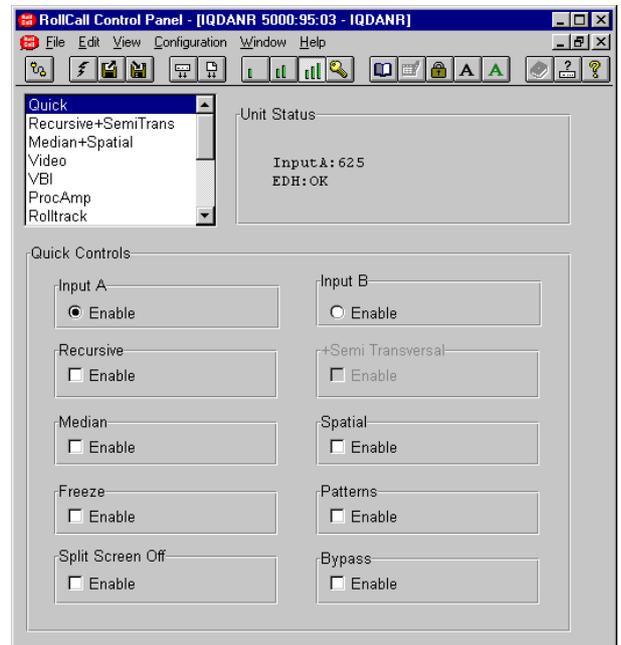
The preset for this function is to not enabled.

#### Spatial

This item allows the Spatial Noise filtering to be enabled.

The level of Luminance and Chrominance Spatial filtering will be at the level set in the related “level” menu.

The preset for this function is to not enabled.



#### Freeze

This item may be used to give a frozen picture of the current output from the module.

The preset for this function is to not enabled.

#### Patterns

When enabled the pattern-generator’s output (as opposed to either SDI inputs) becomes the output of the module.

Note that the pattern bypasses the filters and ProcAmp controls.

#### Split Screen Off

When enabled this item provides a quick method of ensuring that the video processing is occurring throughout the entire active field, and thus over-writes the Monitor’s split screen selection.

The preset for this function is to not enabled.

#### Bypass

When enabled the input signal will pass through to the output unprocessed.

A delay is automatically inserted that is equivalent to any previous processing delay so that the input to output delay is unchanged.

## Recursive + Semi Trans

### Recursive

This item allows the Recursive Noise filtering to be enabled.

The level of Luminance and Chrominance recursive filtering will be at the level set in the related Luma and Chroma level selections.

The preset for this function is to not enabled.

### Spatial Transversal

This item allows Spatial Transversal Noise filtering in addition to Recursive Noise filtering to be enabled.

*Note that this item can only be enabled if the Recursive Noise filtering item is already enabled.*

The preset for this function is to not enabled.

### Luma

This item allows the level of Luminance noise filtering to be set. The level may be set to Off, Minimum, Medium or Maximum.

Preset is to Min.

### Chroma

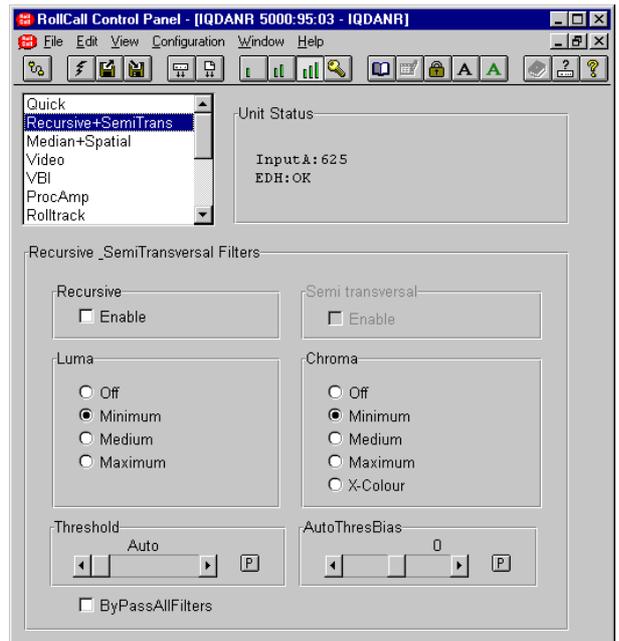
This item allows the level of Chrominance noise filtering to be set. The level may be set to Off, Minimum, Medium, Maximum or X-Color

X-Color = Cross Color

In this mode some reduction of cross colour can be achieved in addition to suppression of Hanover bars.

This mode could be used where the picture content has a lot of high frequency diagonal luminance. e.g. Small graphics, captions, scrolling titles, chequered patterning etc.

Preset is to Min.



### Threshold

This function allows the sensitivity to noise of the motion detector to be set using the scroll bar. The lowest level of 0 gives the greatest sensitivity to motion, but allows more noise to break through, while 15 gives the greatest noise reduction but can lead to excessive filtering of low-level textures. When this is set to "auto" the threshold is dynamically set to an appropriate value for the current input noise level.

The preset for this function is Auto.

### AutoThresBias (Automatic Threshold Bias)

This function allows (when in auto Threshold mode) to give a subjective bias, enabling more or less noise reduction. Modifications of the bias should not be necessary under normal conditions. The allowed range is from -3 (less noise reduction) to +3 (more noise reduction).

The preset for this function is 0.

### BypassAllFilters

When enabled, the video input is passed unprocessed through the module's recursive, semi-transversal, median and spatial filters. The preset for this function is to disabled.

## Median + Spatial

### Median Filter

The Median filter may be enable by checking the **Median Enable** box.

The level of will be at the level set in the related level selections.

The preset for this function is to not enabled.

#### Level

This item allows the level of Median Filtering to be selected. Selections are Minimum 1, Minimum 2, Medium 1, Medium 4, Maximum 5 and Maximum 6.

Preset is to Max5.

### Spatial Filter

The Spatial filter may be enable by checking the **Spatial Enable** box.

The level will be at the level set in the related level selections.

The preset for this function is to not enabled.

#### Luma

This item allows the level of Luminance Spatial filtering to be set. The level may be set to Off, Minimum, Medium or Maximum.

Preset is to Min.

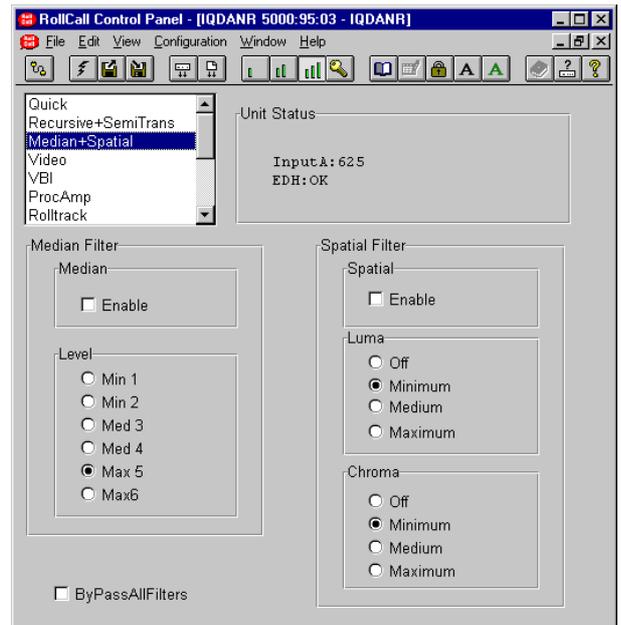
#### Chroma

This item allows the level of Chroma Spatial filtering to be set. The level may be set to Off, Minimum, Medium or Maximum.

Preset is to Min.

#### BypassAllFilters

When enabled, the video input is passed unprocessed through the module's recursive, semi-transversal, median and spatial filters. The preset for this function is to disabled.



**Video**

**Source**

This item allows either input A or input B to be selected as the input to the unit.

Note that only one input may be selected and it is not possible to deselect both inputs.

**Standard**

This item is used to specify the line standard of the signal to be processed.

Selecting **525** insists that the incoming signal is processed as a signal with 525 lines per frame.

Selecting **625** insists that the incoming signal is processed as a signal with 625 lines per frame.

**Auto** enables the unit to determine the standard of the incoming signal and to process it accordingly.

The preset for this function is auto.

**525 V-Std**

The module generates the TRS codes for the outgoing signal. With 525 line standards, these are options for the TRS codes.

This module allows the options to be chosen. The embedded V-flag style options are

OVD:	Optional Video Data, unfiltered lines 1-9/264-272
OBD:	Optional Blanking Data, unfiltered lines 1-19/264-282
ABD:	Additional Blanking Data, unfiltered lines 1-21/264-284 V flag as OBD.

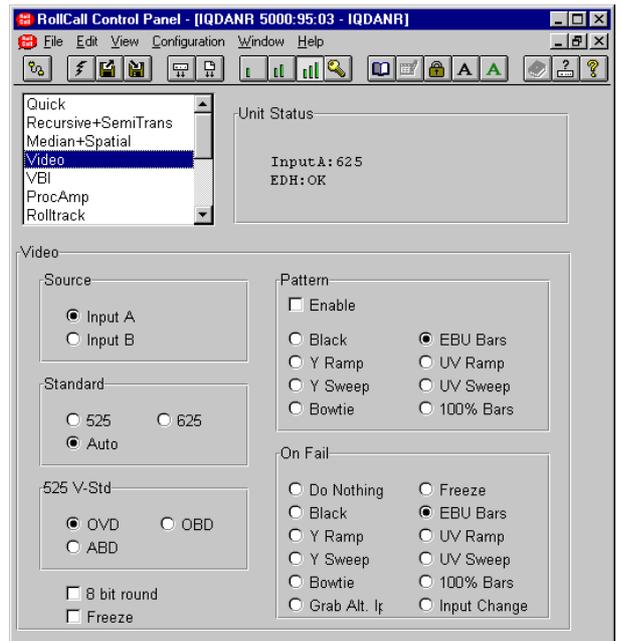
The default status is OVD.

**Pattern**

Enable

When this item is enabled the pattern selected from the list below will become the output signal.

Black	EBU Bars
Y Ramp	UV Ramp
Y Sweep	UV Sweep
Bowtie	100% Bars



**On Fail**

This sets the default mode for the unit when the input signal fails. The options are:

Do Nothing	Freeze picture
Black Pattern	EBU Bars Pattern
Y Ramp Pattern	UV Ramp Pattern
Y Sweep Pattern	UV Sweep Pattern
Bowtie Pattern	100% Bars Pattern
Grab Alt. Ip	Input change (Uses the other input if the selected input fails)

**8 Bit Round**

When selected, 10 bit to 8 bit rounding, using truncation error feedback is enabled.

This is only done at the output stage of the module so signal processing is maintained at 10 bits or higher until the output stage. Use of this facility may be preferable as some systems truncate the video to eight bits. Rounding to 8 bits upstream of such systems may improve the quality of the picture.

The default status is 8 bit rounding off.

**Freeze**

This function is used to give a frozen picture of the current output from the module and toggles between enabled and disabled.

The preset for this function is Off.

**VBI**

This function is used to select which lines of the Vertical Blanking Interval are to be passed through unprocessed and which ones are to be blanked.

**VBI Data**

The options are:

- All Thro'            Pass's all VBI data unprocessed
- All Blanked        Blanks all VBI data
- User Sel            Blanks only selected lines of VBI data, as selected by the User. It selects the 625 or 525 configuration depending on the video standard of the signal being processed.

The preset for this function is All-Thro'.

**625 Sel'n** (625 line standard signals)

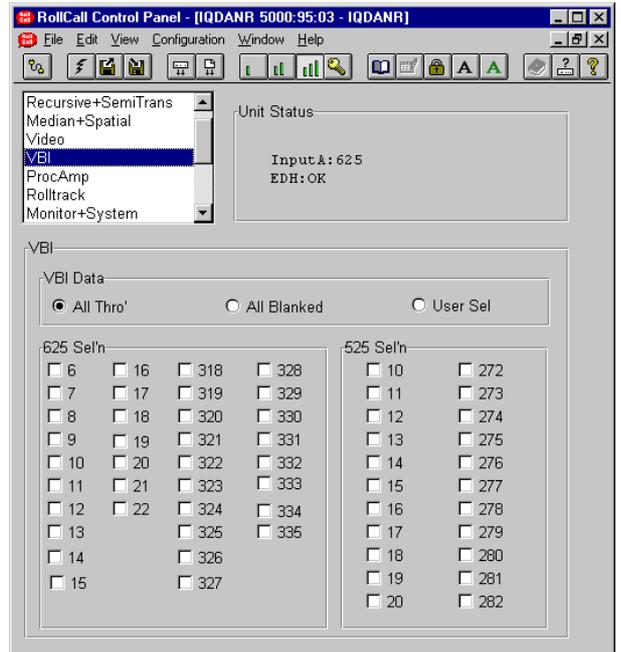
Checking a box in this item will blank the VBI data on that line.  
 Un-checking a box will allow the VBI data on that line to be passed through unprocessed.

The preset condition for this function is that no lines are selected.

**525 Sel'n** (525 line standard signals)

Checking a box in this item will blank the VBI data on that line.  
 Un-checking a box will allow the VBI data on that line to be passed through unprocessed.

The preset condition for this function is that no lines are selected.



## Proc Amp

Note that for this and other screens the following applies:

The  and  symbols at the ends of the scroll bar allow the value to be adjusted in discrete steps.

The numerical value will be shown above the scroll bars and selecting Preset  will return the setting to the calibrated value of 0 for items on this screen.

### Y\_Gain

This item allows the gain of the luminance signal to be adjusted.  
By using the scroll bar the gain may be adjusted by  $\pm 6$  dB in steps of 0.1 dB.

### Black\_Level

This item allows the Y pedestal or black level to be adjusted.  
By using the scroll bar the pedestal may be adjusted by  $\pm 100$  mV in steps of 0.8 mV.

### C\_Gain

This item allows the gain of the chrominance signal to be adjusted.  
By using the scroll bar the gain may be adjusted by  $\pm 6$  dB in steps of 0.1 dB.

### Picture Position

This item allows the timing of the picture position relative to the normal value, to be adjusted.  
By using the scroll bar the timing may be adjusted by  $\pm 592$  ns in 148 ns steps

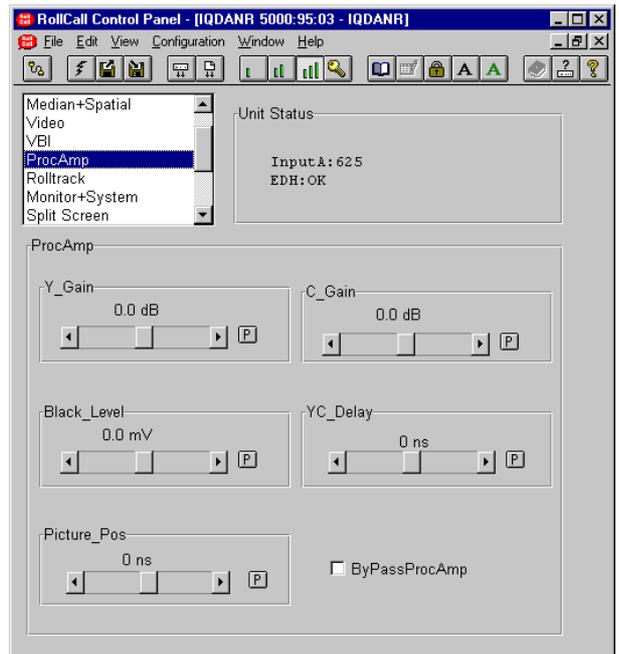
### YC\_Delay

This item allows the timing of the chrominance signal relative to the luminance signal to be adjusted, (i.e. Y to Cb/Cr timing) in nanoseconds.  
By using the scroll bar the timing may be adjusted by  $\pm 444$  ns in 148 ns steps.

### BypassProcAmp

When this item is enabled the video input signal will pass unprocessed through the Proc Amp.

The preset for this function is Off.



**RollTrack**

This function allows the value of the delay time produced by this module to be sent, via the RollCall™ network, to audio delay units connected on the same network. This enables compatible audio delay units to produce an audio delay dependent on this and other similar units. The audio delay unit will dynamically follow or track the received delay-time information allowing processed video signals to be timed correctly with audio signals. This automatic tracking system via the RollCall™ network is call **RollTrack**.

*For more detailed information, see the RollTrack section (Appendix) at the end of this manual.*

**Audio RollTrack**

The destination for the delay information is set by the network code address as follows:

**Unit 1-8**

This item allows the address of the selected destination unit to be set.

To change the address, type the new destination in the text area and then select  (return)

 (Preset) returns to the default destination

*For details of the RollCall command numbers for specific units please contact your local Snell & Wilcox agent.*

The full network address has five sets of numbers.

For example: 0000:10:01\*14\*51

The first set (0000) is the network segment code number

The second set (10) is the number identifying the (enclosure/mainframe) unit

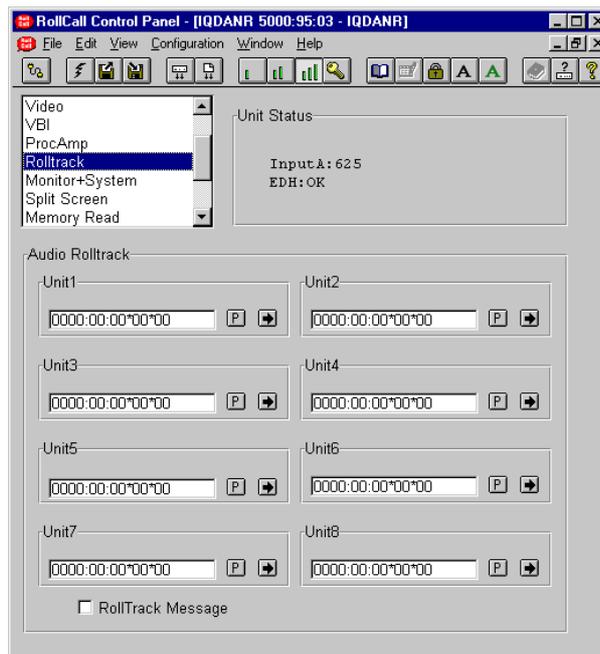
The third set (01) is the slot number in the unit

The fourth set (14) separated by an \* is the channel number.

*Note that only channel numbers 14, 15, 16 & 17 should be used for audio delay cards.*

The fifth set (51) is the board type identification.

Once a destination address for a unit has been set the OK function will return to the unit menu to allow another address to be set if required.



The ID entered must match the receiving units own ID or else the command will be ignored. If the ID value is set to 00, the receiving unit does not perform an ID match and will always accept the incoming command.

The **Delay...** menu of the IQBDAD, for example, should then be selected and then select **Auto**.

The unique identification of the destination unit for various modules is as follows:

Module	ID
IQBADC .....	51
IQBDAC .....	52
IQBAAD .....	53
IQBDAD .....	54
IQBSYN .....	89
IQBADCD .....	107

And for this module  
IQDANR ..... 179

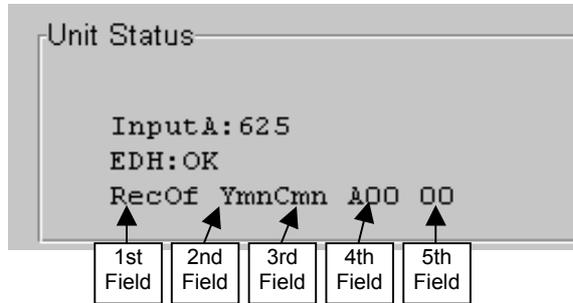
**RollTrack Message**

When enabled a warning will be displayed if the communication link is unsuccessful.

**Monitor + System**

**Panel Display**

This function enables the selection of information that is to be viewed on the bottom line of the PC template information area.



**Default is Normal**

The following options are available:

**Normal**

This indicates which filters have been enabled. The codes indicating the different filters are:

- REC: Recursive
- TRN: Semi-Transversal
- MED: Median
- SPA: Spatial

**Recursive**

This indicates the status of the recursive filter.

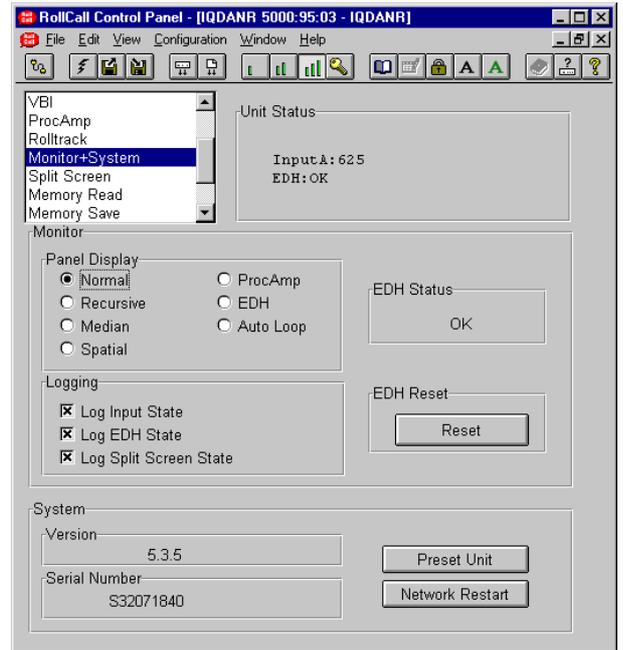
The first field will be either RecOn or RecOf, indicating whether or not the recursive filter has been enabled.

The second field will be Yof, Ymn, Ymd or Ymx indicating whether the luminance setting is off, minimum, medium or maximum.

The third field will be either Cof, Cmn, Cmd, Cmx or Cxc indicating whether the chrominance has been set to off, minimum, medium, maximum or cross-colour.

The fourth field will be either A00 to A15, indicating that the threshold has been set to Automatic, or a number from 00 to 15, indicating the fixed threshold that has been selected.

The fifth field will be a number from -3 to +3, indicating the selected automatic-threshold-bias.



**Median**

This indicates the status of the median filter.

The first field will be either MedOn or MedOff, indicating whether or not the median filter has been enabled.

The second field will be YCmin1, YCmin2, YCmed3, YCmed4, YCmax5 or YCmax6, indicating the strength of the median filtering of both luminance and chrominance.

**Spatial**

This indicates the status of the spatial filter.

The first field will be either SpatOn or SpatOff, indicating whether or not the spatial filter has been enabled.

The second field will be either Yoff, Ymin, Ymed, or Ymax, indicating the strength of the spatial filtering of the luminance.

The third field will be Coff, Cmin, Cmed, or Cmax, indicating the strength of the spatial filtering of the chrominance.

## ProcAmp

This gives a partial status of the ProcAmp.

The first field is the Y-Gain in dB. It will be a number ranging from  $-6.0(\text{dB})$  to  $+6.0(\text{dB})$ .

The second field is the C-Gain in dB. It will be a number ranging from  $-6.0(\text{dB})$  to  $+6.0(\text{dB})$ .

The third field is the Black-Level in mV. It will be a number ranging from  $-100.0(\text{mV})$  to  $+100.0(\text{mV})$ .

## EDH

This gives number of Error Seconds since the last EDH reset.

This field shows the elapsed time since the last reset (or power on) and is of the format hour:minute:second.

The elapsed time has a maximum duration of 99 hours.

## Auto Loop

This results in the panel display sequencing through all of the (above) panel display options. One display option is held for ten seconds before it moves on the next option.

The default for this sub-menu is Normal.

## Logging

If a logging device is attached to the RollCall™ network, information about various parameters can be made available to such a device.

### Log Input State

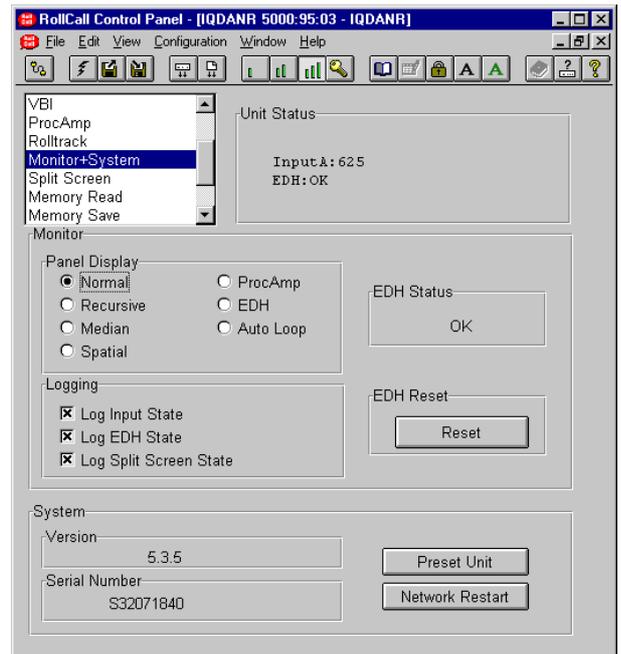
When activated, a change of input signal condition will be available for the logging device.

### Log EDH State

When activated, EDH error reports will be available for the logging device.

### Log Split Screen State

When activated, a change of the Split Screen condition will be available for the logging device.



## EDH Reset

Selecting Reset will reset the EDH error count and the timer shown in the information window, to zero.

## System

### Version

This item shows the version of the software fitted in the module.

### Serial Number

This item shows the serial number of the module.

## Preset Unit

Selecting this item sets all adjustment functions that include a preset facility, to their preset values.

## Network Restart

This will reboot the unit simulating a power-down power-up cycle restoring power-up settings.

## Split Screen

### Split Screen Select

To enable the effects of noise reduction to be easily seen this function allows the screen to be split into 2 halves either left/right or top/bottom. One half will show the picture with noise reduction and the other half without noise reduction.

### Off

This will disable the split screen function.

### H-Split

When enabled the screen will be split into two equal sections separated by a vertical line.

*Note that if the Off option is selected in the BorderSelect menu, the separating line will not be seen.*

The processed picture will occupy the right-hand section of the screen and the unprocessed picture will occupy the left-hand side section.

### V-Split

When enabled the screen will be split into two equal sections separated by a horizontal line.

*Note that if the Off option is selected in the BorderSelect menu, the separating line will not be seen.*

The processed picture will occupy the bottom section of the screen and the unprocessed picture will occupy the top section.

### H-Repeat

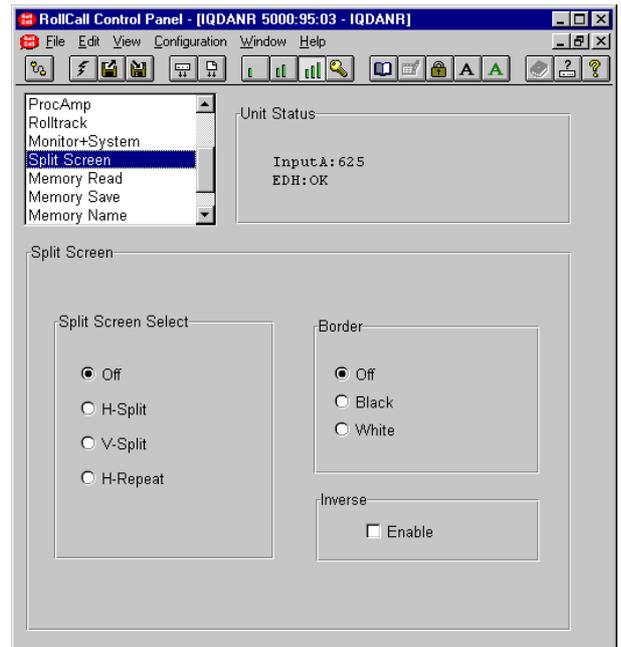
When enabled this function performs a horizontal repeat so that the left half of the picture is repeated on the right half of the picture. One half of the picture is processed and the other half remains unprocessed.

### Inverse

When Inverse is enabled the processed half of the screen becoming the unprocessed half, and vice versa. It serves no function if Split Screen is set to Off.

The preset value is Off.

The preset for the border is Off.



### Border

This function allows a colour border to separate the processed and the unprocessed part of the picture when using the split screen function.

Options are:

**Off** No border between the processed and unprocessed image.

**Black** A black border between the processed and unprocessed image.

**White** A white border between the processed and unprocessed image.

*The separating line will have the same color as that selected via the BorderSelect menu, i.e. Black or white. Note that if the Off option is selected the separating line will not be seen.*

**Memory Read**

The memory function provides the path to the menu that deals with both the pre-set and the user defined memories. The “User Defined Memories”, with the exception of “preset unit” or “factory presets”, store the settings for the filters, video, proc-amp, bypass modes, roll-track, VBI, monitoring, and logging.

The “fixed memory” settings only contain preset filter settings. Recalling a “fixed memory setting” will, therefore, not effect the status of the video, proc-amp, bypass modes, RollTrack, VBI, monitoring or logging.

“Preset unit” or “factory presets” effects everything.

**Rear Fixed Memory**

This item is used to select one of the pre-defined (fixed) memory settings.

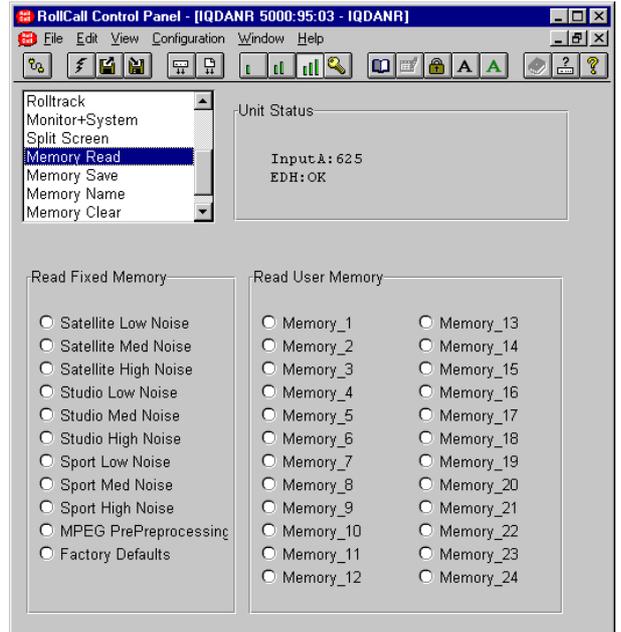
The options are:

Satellite low noise, satellite medium noise, satellite high noise, studio low noise, studio medium noise, studio high noise, sport low noise, sport medium noise, sport high noise, MPEG pre-processing and Factory Presets.

The default for this function is Factory Presets.

**Read User Memory**

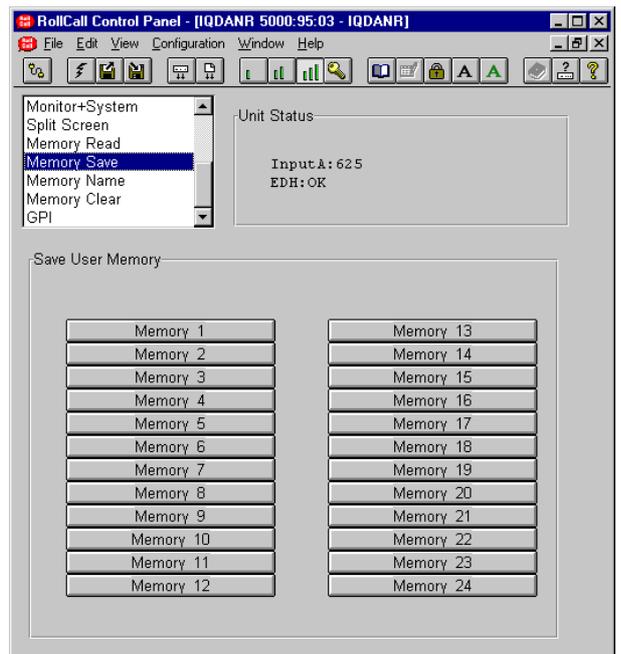
This item may be used to set the unit’s current settings to those stored in one of the 24 user-defined memory locations.



**Memory Save**

**Save User memory**

This item is used to save the current status of the Filters, Proc-Amp, etc, to one of the 24 user defined memory locations.



**Memory Name**

**Name User Memory**

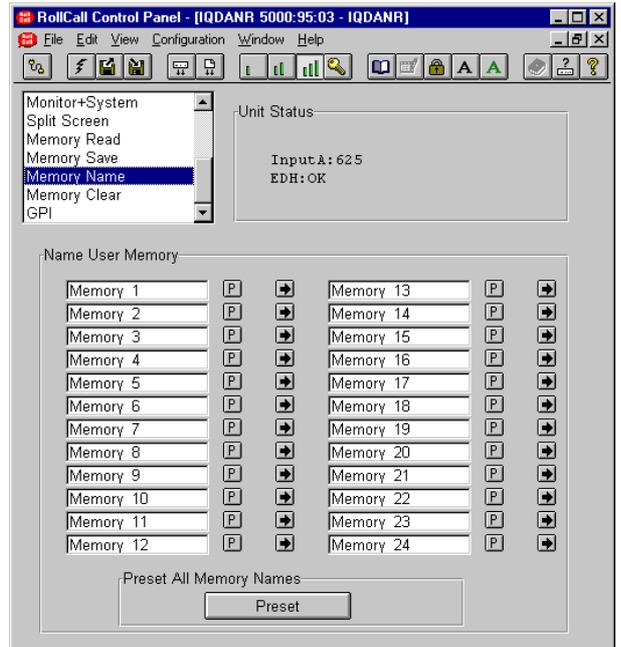
This item is used to give a user-friendly name to a user defined memory location.

To change the name, type the new name in the text area and then select  (return)

 (Preset) returns to the default name.

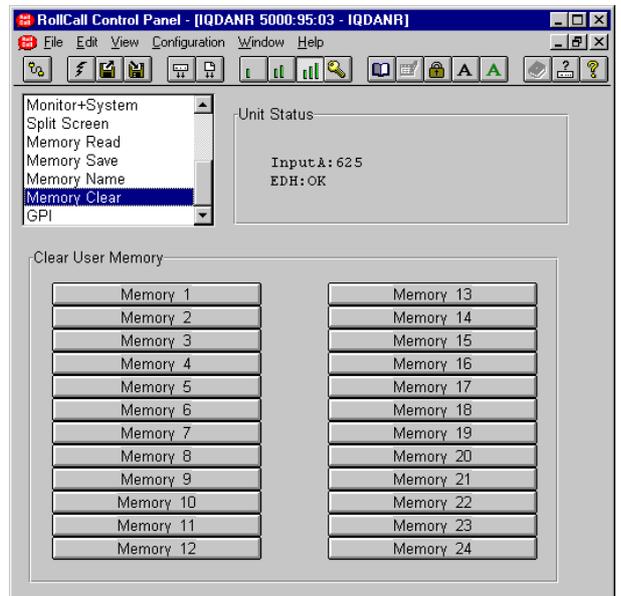
**Preset All Memory Names**

Selecting this item will return all memory location names to their default names.



**Memory Clear**

This item is used to reset individual user defined memory locations to their default values.



**GPI**

The three GPI connectors are used for accepting GPI information (from mechanical switch contacts, relay contacts etc.) The resulting action that the unit takes may be selected using this item.

**GPI 1, 2, 3**

The action resulting from the selected GPI input being activated may be programmed from the list by selecting (text becomes highlighted) the required action.

The GPI input has three user selectable modes of operation:

- Off            Function inactive
- Latching    When the contact is closed the function is activated; when the contact is open, the function is de-activated.
- Edge         (Edge-triggered) Each open-to-closed action the GPI function will be toggled between activated and de-activated.

*Note that for non-toggle functions the GPI selection is simply activated.*

