IQDCPP SDI Pre-Processor

$C\epsilon$

Module Description

The IQDCPP is a pre-processor for SDI signals with powerful noise reduction capabilities. IQDCPP 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 IQDCPP output can be rounded to 8 bits. The processing includes recursive, semi-transversal, vertical, horizontal and prism 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.

Compressors demand extremely high quality inputs if artifacts are to be minimized. 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 IQDCPP a compressor can more fully utilise the available bandwidth.

IQDCPP 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 IQDCPP output can be rounded to 8 bits. The processing includes recursive, semi-transversal, vertical, horizontal and prism 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 IQDCPP 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.
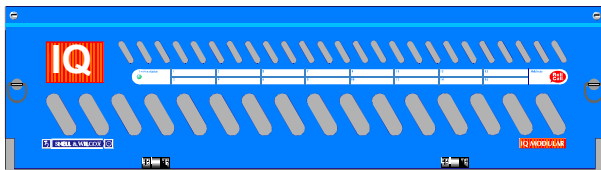
REAR PANEL VIEW
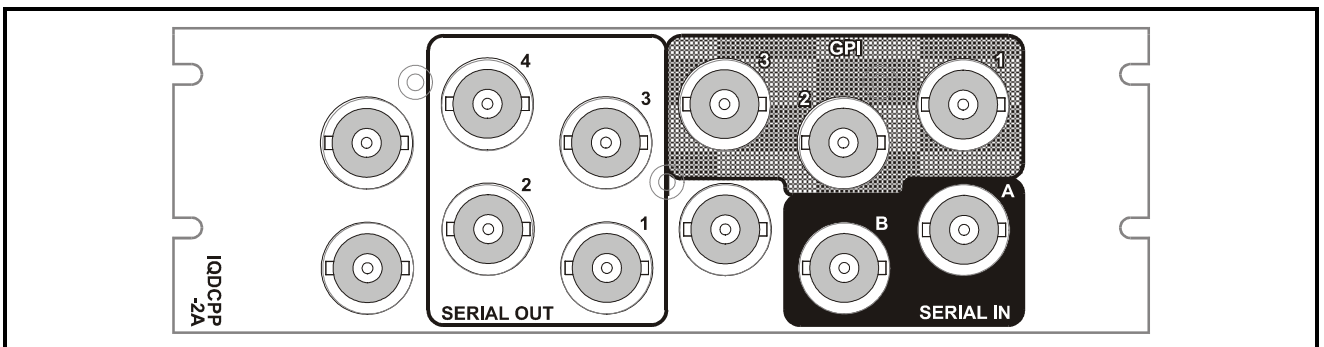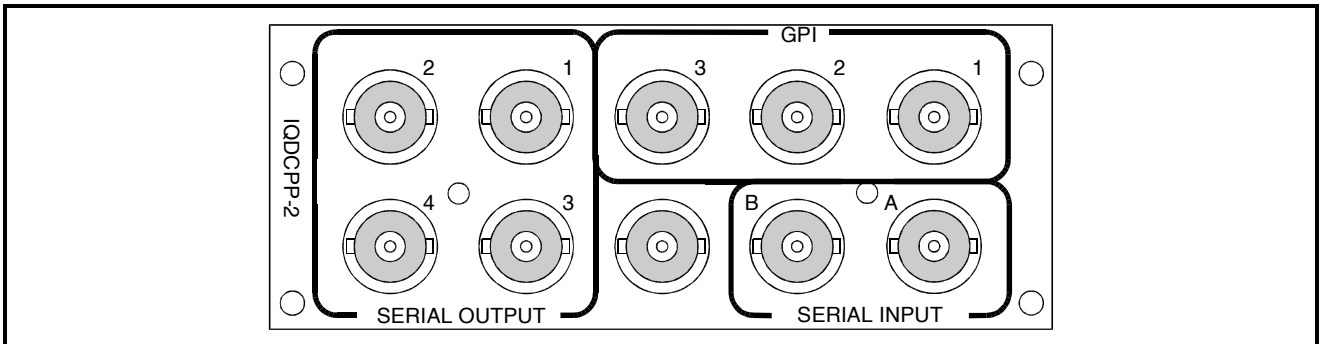
Versions of the module cards available are:

IQDCPP-2   SDI Pre-processor   Double width module
IQDCPP-2A   SDI Pre-processor   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.
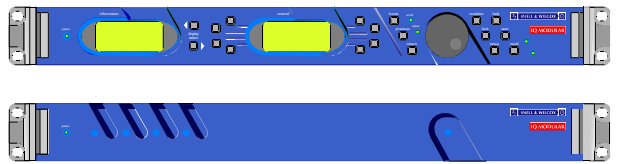
'A' Style Enclosure

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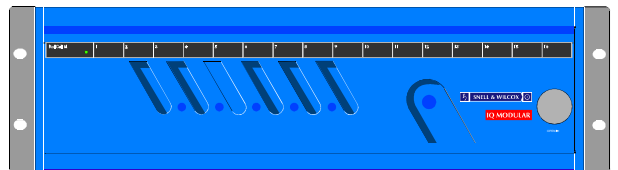

(Enclosure order codes IQH3A-E-O, IQH3A-E-P, IQH3A-N-O, IQH3A-N-P)

'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)
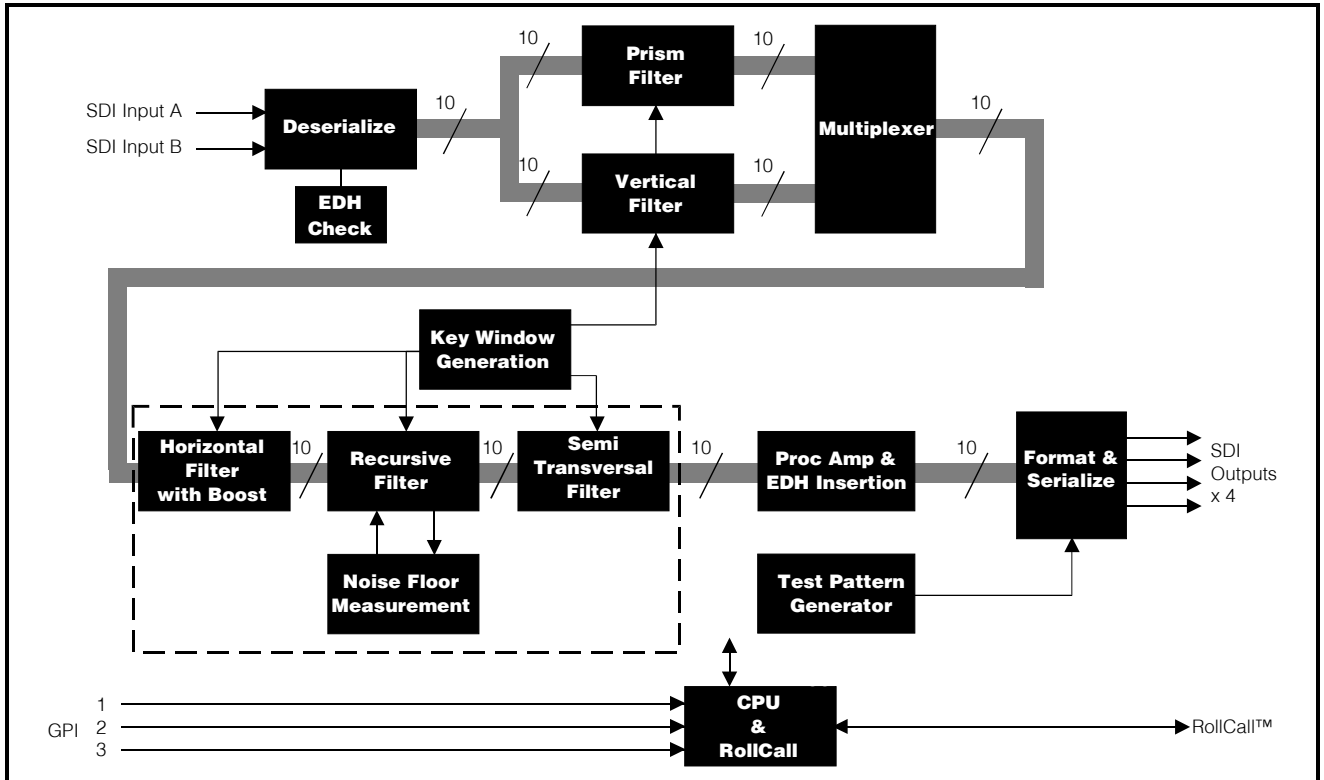

(Enclosure order codes IQH3N-O, IQH3N-P)

(Enclosure order codes IQH3U-RC-O, IQH3U-RC-P)

BLOCK DIAGRAM

Features

Five filters

- Recursive filter, with unique filter biasing and motion algorithms

    Semi-Transversal filter, improving recursive filter performance

    Vertical filter for linear noise reduction in the vertical domain

    Horizontal filter for linear noise reduction in the horizontal domain

    Prism Filter for improved noise reduction using spatial and temporal processing, as patented by Snell and Wilcox

    Unique "strength bar" control, allowing simple increase in pre-processing power

    Split screen and "horizontal repeat" for comparison, with optional border and choice of border colour

    Pre-defined fixed settings for common types of Pre-Processing

- Minimum 10 bit processing throughout the system

- Proc. Amp: Y Gain, C Gain, Black Level Adjust, Picture Position, Y/C Delay

- Crystal locked output to reduce high frequency input jitter
- Compensating delay for audio and other embedded data
- 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 or blanked
- 24 user memories, with ability to rename each of them
- RollTrack and RollLog implemented

Technical Profile

Features

Signal Inputs

Serial Digital...................... 2 x SDI

Standards .... SMPTE 259M-C-1997

GPI .... 3 x Closing Contact style inputs

Pre Processor Card Edge Controls (also available via RollCall)

Pre-processor Processing.. Minimum 10 bit throughout

Recursive Filter.................. Motion Adaptive asymmetric temporal (frame) recursive filter
Three set levels with maximum noise reduction of up to 12dB
Bias adjustment ±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

Vertical Filter:..................... Vertical Bandwidth limiting capability
Spatial - Temporal: ON/OFF
Vertical: off, min, med, max.

Horizontal Filter:................. Horizontal Bandwidth limiting capability
Spatial - Temporal: ON/OFF
Horizontal Y: off, med, max
Horizontal C: off, med, max
Boost: neg, off, min, max

Prism Filter: .... Spatial and Temporal Noise Reduction
Spatial - Temporal: ON/OFF
Prism – off, min, med
Adaption Gain: min, max
Adaption Coring: min, med, max

Vertical Interval Data:......... All on, All off
(625 standard: 6-22/318-335)
(525 standard: 10-20/272-282)

Signal Outputs

Serial Digital...................... 4 x component SDI Program

Standards .... SMPTE 259M-C-1997

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, throughout the active picture

EDH .... Input error detection and handling
Status: none, ok, errors
Reset: "Full Field Error Seconds" and "Elasped Time" simultaneously 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, horiz-repeat
Inverse: inversion of selected key window
Warning: split-screen 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

Fail Select .... This sets the default mode for the unit when the input signal fails
Do Nothing, Freeze, Black, EBU Bars, Y Ramp, UV Ramp, Y Sweep, UV Sweep, Bowtie, 100% Bars, GrabAltIp, InputChng

Memory............................. Read Fixed: Recall pre-defined (fixed) memories or factory defaults Read User: Recall 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: ± 6dB in 0.1dB steps. C Gain Adjust: ± 6dB in 0.1dB steps. Black Level Adjust: ± 100mV in 0.8mV steps Horiz Y/C Adjust: ± 444ns in 148ns steps Picture Position Adjust: ± 592ns 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

System:............................. EDH logging GPI configuration RollTrackTM

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 .... 800mV ± 10% (for Outputs 1 and 2)
650mV ± 10% (for Outputs 3 and 4)

Output Overshoot............... < 70 mV

Output Return Loss............ Better than 15dB to 270 MHz

Output Signal Level............ 800 mV ±10%

Output Overshot:............... < 70mV

Output Jitter .... < 0.25UI

Power Consumption

Module Power Consumption   13.8W 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 IQDCPP, 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 that 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.

Spatial-Temporal Filters

There are three filters that come under the IQDCPP's "Spatial-Temporal" umbrella. They are the Horizontal filter, the Vertical filter and the Prism filter. Turning the "Spatial-Temporal" Enable/Disable box to "disable" results in no horizontal, vertical or Prism filtering. With the box set to "enable", the resultant filtering depends on the individual setting for each of the three filters.

With both the horizontal and vertical filters, the bandwidth for both luminance and the chrominance can be independently controlled. With a reduction in bandwidth, the picture appears "softer". The overall perception of picture sharpness can be raised again using the "boost" facility, which is associated with the horizontal filter. With the Prism filter, substantial noise reduction can be achieved, while maintaining a perception of sharpness within the picture.

Horizontal Y and C Strengths

These "horiz" setting change the horizontal bandwidth for both luminance (Y) and chrominance (C). Three settings are provided for both. "Off" ensures that there is no bandwidth reduction caused by this filter. "Med" causes some bandwidth reduction. "Max" causes maximum horizontal softness, i.e. the minimum horizontal bandwidth.

Luma Boost

The "boost" facility is provided to increase the perceived picture sharpness in a picture that has had its horizontal bandwidth reduced and consequently looks "soft".

Four settings are provided for the spatial-temporal filter's "boost" control. The "off" setting ensures that there is no boost added to the signal. To obtain only some small boost, this setting should be at "min" while for the greatest perceived picture sharpness, "max" is used.

The ability to have some de-enhancement is also provided by the IQDCPP. To activate the de-enhancement, the boost setting is put to "neg". This will decrease the perceived picture sharpness as well as the bit rate.

Vertical Selection

Three settings are provided for the vertical-temporal filter's "vert" control. The "off" setting ensures that maximum vertical bandwidth and thus maximum vertical sharpness is maintain. The "min" provides a reduced vertical bandwidth. This bandwidth can be reduced further by setting the control to "med" or "max". Thus maximum means maximum strength of vertical filtering.

Prism

The Prism filter, which can be chosen instead of the aforementioned vertical filters, is an adaptive filter. When applied, two levels of strength can be chosen. In the presence of motion, and a strength of "PrismMed" chosen, the picture is vertically filtered with the aforementioned "vert-med" bandwidth. With "PrismMin" chosen and in the presence of motion, "vert-min" filtering is applied. Meanwhile the static part of the picture undergoes complimentary spatial and temporal filtering, maximising the pre-processing.

Prism Adaption

When the Prism filter is being used, the performance of this filter can be modified using the "Prism Adapt – Gain" and "Prism Adapt – Core" menus. This effectively allows the user to apply a bias to what is being considered as "moving object" as opposed to "moving noise". Where there is fast motion, it is advisable to set the gain control to "max", whereas otherwise it would be set to "min". With a very noisy picture, the coring control would be set to "max", while with a very quiet picture, it would be set to "min". Normally the coring control will be set to "med".

REAR PANEL CONNECTIONS

SERIAL INPUT A and B

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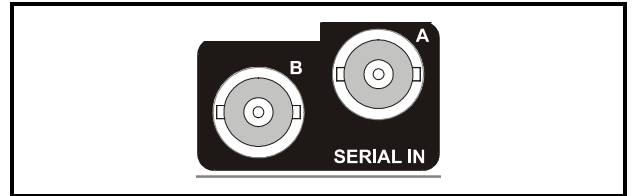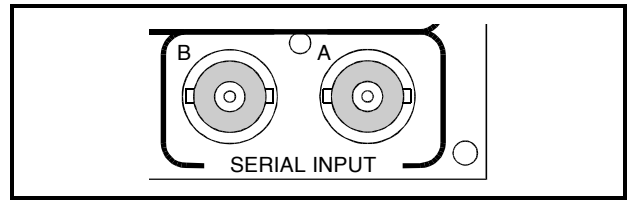
SERIAL OUTPUTS

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.
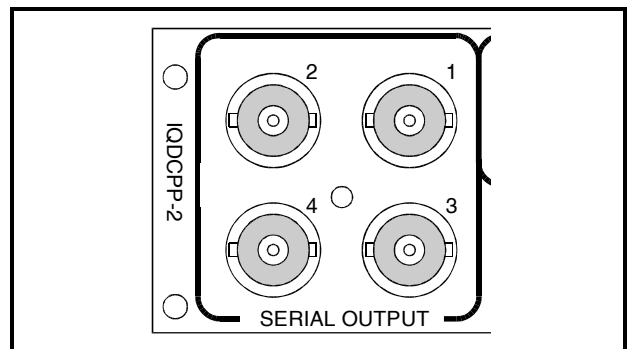
GPI

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.
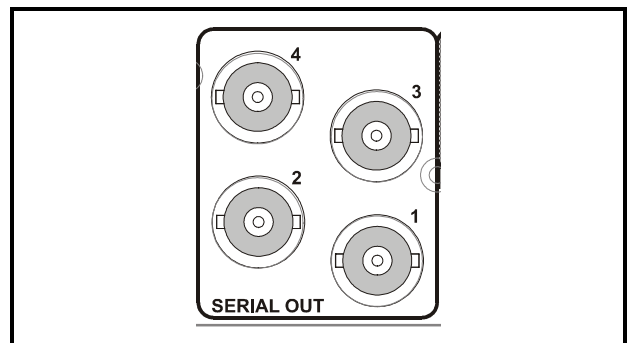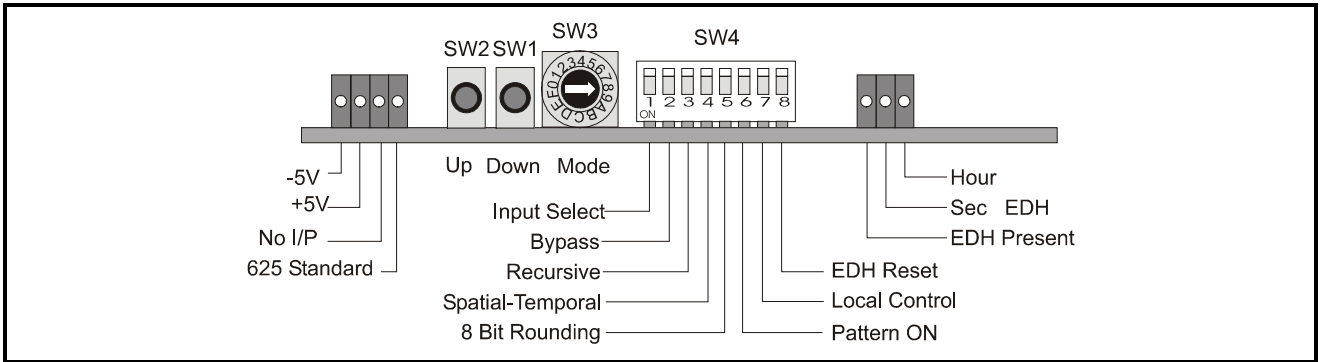
The functions that can be selected by GPI are:

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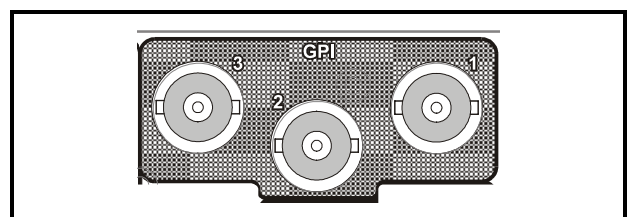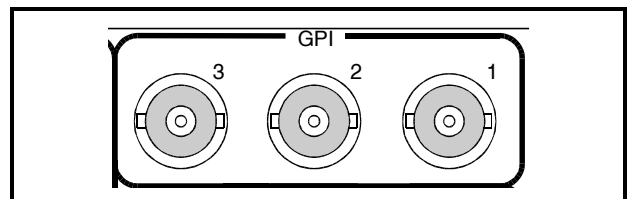
CARD EDGE CONTROLS

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

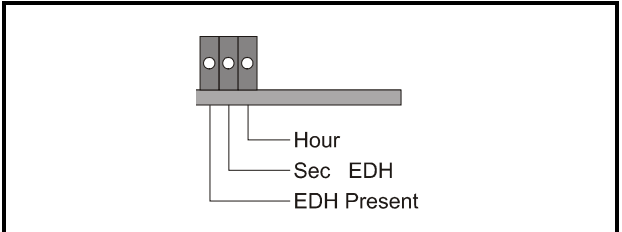When illuminated these LED's indicate that the +5 V and -5 V supplies are present.
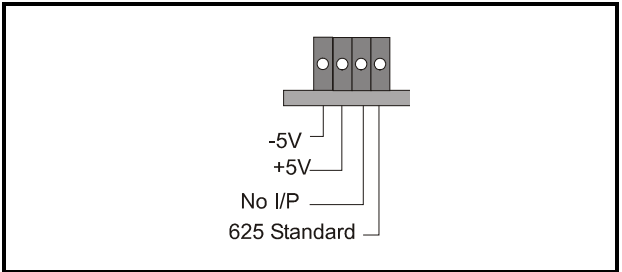
No I/P

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 IQDCPP is available either via card edge controls and/or via a more comprehensive remote control system using RollCall™
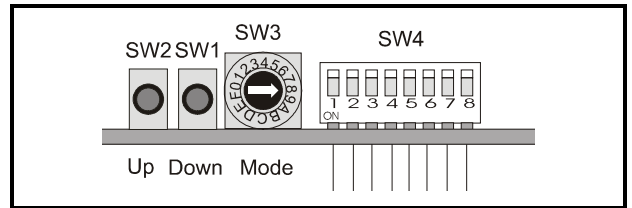
SWITCHES

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.

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. Setting it to OFF disables both. The Y, C, threshold and bias settings are unaffected by this switch.

Position 4
Setting this to ON enables the spatial-temporal filters. Simultaneously "adaption-core" is set to "med", "adaption-med" is set to "min" and "boost" is set to "off". The horizontal and vertical bandwidths are unaffected by this switch.

Position 5
Setting this to ON enables 8 Bit Rounding. The 8 bit Rounding is applied throughout the active picture and is not dependent on the split screen setting.

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.
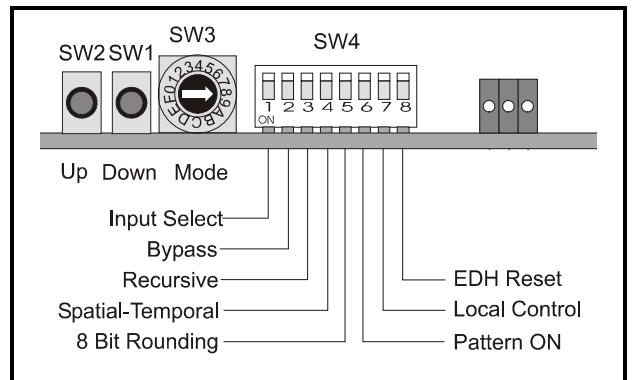
Position 6

Setting this to ON, the selected Test Pattern is switched to the output. When the test pattern is selected, the filters and the ProcAmp are essentially bypassed.

The pattern selection is made using the hex switch SW3.

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 modifies the Luma Level of Recursive noise reduction.

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

The default setting is min.

Position 1:

This modifies the Chroma Level of Recursive noise reduction.

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

The default setting is min.

Position 2:

This modifies the Threshold of the Recursive noise reduction.

The available selections are: auto, 1, 2…14, 15.

The default setting is auto.

Position 3:

This modifies the applied Bias associated with the Automatic Threshold for Recursive noise reduction.

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

The default setting is 0.

Position 4:

This modifies the Selection of the Vertical and Prism filters.

This filter is applied equally to the luminance and chrominance.

The available selections are off, Prism-Med, Prism-Min,Vert-Min, Vert-Med, Vert-Max.

The default setting is off.

Position 5:

This modifies the Luma Level of Horizontal noise reduction.
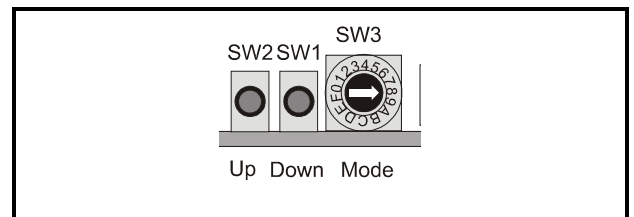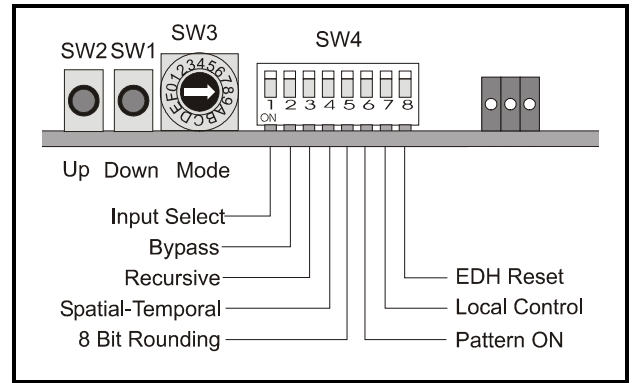
The available selections are: off, med and max.

The default setting is off.

SW3 cont.

Position 6:
This modifies the Chrominance Level of Horizontal noise reduction.
The available selections are: off, med and max.
The default setting is off.

Position 7:
This modifies the Proc Amp's Luma Gain.
The available range is: ± 6 dB in 0.1 dB steps.
The default setting is 0 dB.

Position 8:
This modifies the Proc Amp's Chroma Gain.
The available range is: ± 6 dB in 0.1 dB steps.
The default setting is 0 dB.

Position 9:
This modifies the Proc Amp's Black Level.
The available range is: ± 100mV in 0.8mV steps.
The default setting is 0mV.

Position A:
This modifies the Proc Amp's Picture Position.
The available range is: ± 592 ns in 148 ns steps.
The default setting is 0 ns.

Position B:
This modifies the Proc Amp's Y/C Delay.
The available range is : ± 444 ns in 148 ns steps.
The default setting is 0 ns.

Position C:
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.

The default setting is EBU Bars.
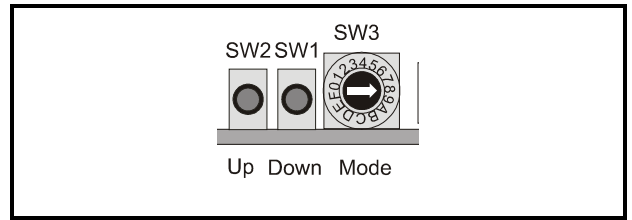
Position D:
This selects the output when there is an Input Failure. The output selection in this order is:

Other SDI ,
Freeze,
Black,
EBU Bars,
Y Ramp,
UV Ramp,
Y Sweep,
UV Sweep,
Bowtie,
100% Bars,
Do Nothing,
Freeze,
Grab Alternative Input,
Input Change.

The default setting is: EBU Bars.

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/pre-set conditions.

MAIN MENU

◄ Quick...   Filters... ►
◄ Bypass   ProcAmp... ►
◄ Memory...   Setup... ►

Quick

◄ Input A   Input B ►
◄ Strength   StrengthSel ►
◄ Recursive   +SemiTrans ►
◄ SpatTemp   Freeze ►
◄ 8bit_Rnd   Pattern ►
◄ SpltScrnOff

StrengthSel

StrengthSel
7
◄ Preset

Memory

◄ ReadFixed..ReadUser... ►
◄ PresetUnit SaveUser... ►
◄   ClearUser... ►
◄   NameUser... ►

NameUser

◄ Memory_1
to
Memory_24

◄ PresetAllUserNames

Memory_x_Name

Memory_x_Name   ►
Memory_x_Name
◄ Clear
◄ Preset   OK ►
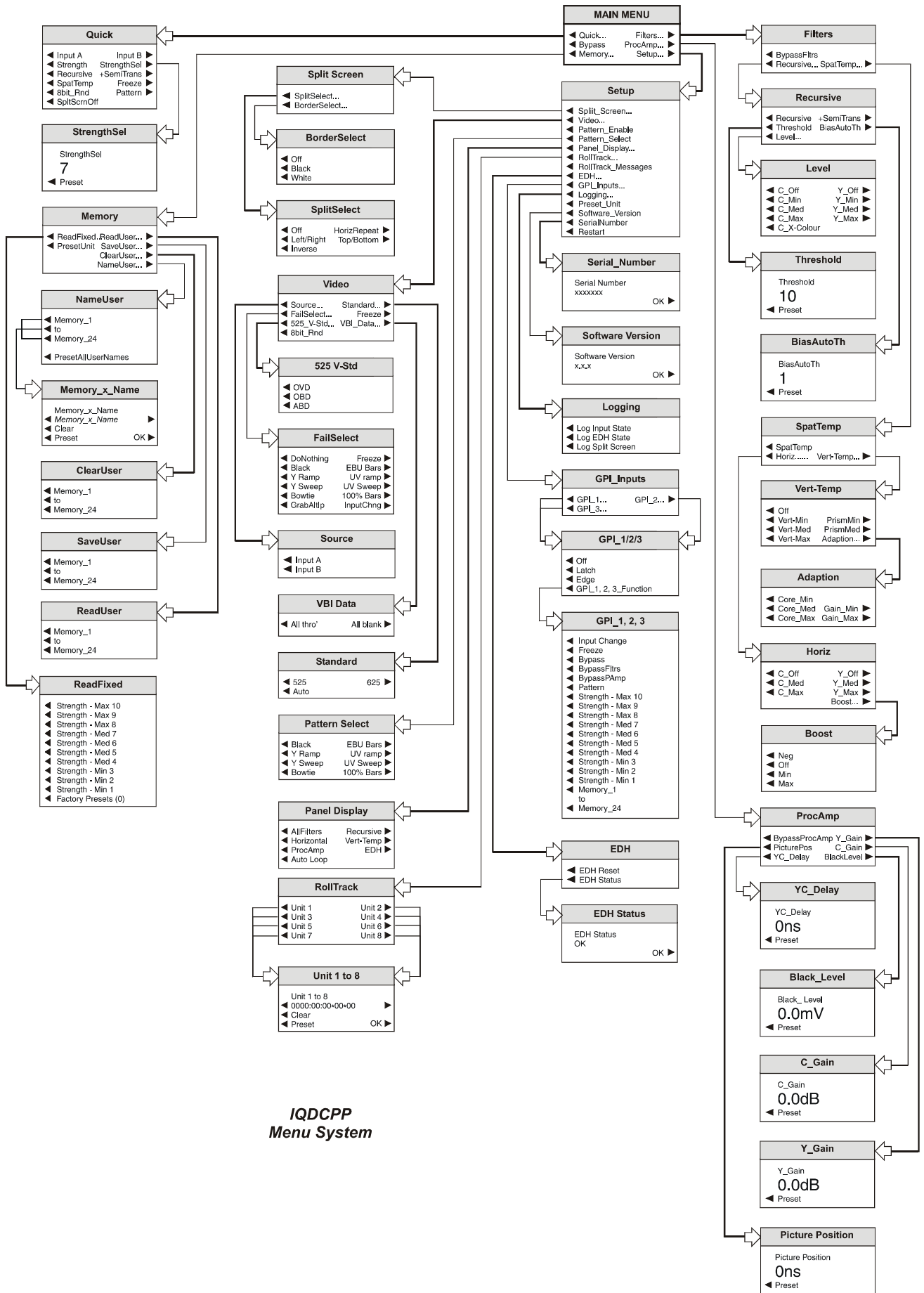
ClearUser

◄ Memory_1
to
Memory_24

SaveUser

◄ Memory_1
◄ to
Memory_24

ReadUser

◄ Memory_1
◄ to
Memory_24

ReadFixed

◄ Strength - Max 10
◄ Strength - Max 9
◄ Strength - Max 8
◄ Strength - Med 7
◄ Strength - Med 6
◄ Strength - Med 5
◄ Strength - Med 4
◄ Strength - Min 3
◄ Strength - Min 2
◄ Strength - Min 1
◄ Factory Presets (0)

Split Screen

◄ SplitSelect...
◄ BorderSelect...

BorderSelect

◄ Off
◄ Black
◄ White

SplitSelect

◄ Off   HorizRepeat ►
◄ Left/Right   Top/Bottom ►
◄ Inverse

Video

◄ Source...   Standard... ►
◄ FailSelect...   Freeze ►
◄ 525_V-Std...   VBI_Data... ►
◄ 8bit_Rnd

525 V-Std

◄ OVD
◄ OBD
◄ ABD

FailSelect

◄ DoNothing   Freeze ►
◄ Black   EBU Bars ►
◄ Y Ramp   UV Ramp ►
◄ Y Sweep   UV Sweep ►
◄ Bowtie   100% Bars ►
◄ GrabAltIp   InputChng ►

Source

◄ Input A
◄ Input B

VBI Data

◄ All thro'   All blank ►

Standard

◄ 525   625 ►
◄ Auto

Pattern Select

◄ Black   EBU Bars ►
◄ Y Ramp   UV ramp ►
◄ Y Sweep   UV Sweep ►
◄ Bowtie   100% Bars ►

Panel Display

◄ AllFilters   Recursive ►
◄ Horizontal   Vert-Temp ►
◄ ProcAmp   EDH ►
◄ Auto Loop

RollTrack

◄ Unit 1   Unit 2 ►
◄ Unit 3   Unit 4 ►
◄ Unit 5   Unit 6 ►
◄ Unit 7   Unit 8 ►

Unit 1 to 8

Unit 1 to 8
◄ 0000:00:00•00•00   ►
◄ Clear
◄ Preset   OK ►

Setup

◄ Spliit_Screen...
◄ Video...
◄ Pattern_Enable
◄ Pattern_Select
◄ Panel_Display...
◄ RollTrack...
◄ RollTrack_Messages
◄ EDH...
◄ GPI_Inputs...
◄ Logging...
◄ Preset_Unit
◄ Software_Version
◄ SerialNumber
◄ Restart

Serial_Number

Serial Number
xxxxxxx
                 OK ►

Software Version

Software Version
x.x.x
                 OK ►

Logging

◄ Log Input State
◄ Log EDH State
◄ Log Split Screen

GPI_Inputs

◄ GPI_1...   GPI_2... ►
◄ GPI_3...

GPI_1/2/3

◄ Off
◄ Latch
◄ Edge
◄ GPL1, 2, 3_Function

GPI_1, 2, 3

◄ Input Change
◄ Freeze
◄ Bypass
◄ BypassFltrs
◄ BypassPAmp
◄ Pattern
◄ Strength - Max 10
◄ Strength - Max 9
◄ Strength - Max 8
◄ Strength - Med 7
◄ Strength - Med 6
◄ Strength - Med 5
◄ Strength - Med 4
◄ Strength - Min 3
◄ Strength - Min 2
◄ Strength - Min 1
◄ Memory_1
to
◄ Memory_24

EDH

◄ EDH Reset
◄ EDH Status

EDH Status

EDH Status
OK
                 OK ►

Filters

◄ BypassFltrs
◄ Recursive... SpatTemp... ►

Recursive

◄ Recursive +SemiTrans ►
◄ Threshold BiasAutoTh ►
◄ Level...

Level

◄ C_Off   Y_Off ►
◄ C_Min   Y_Min ►
◄ C_Med   Y_Med ►
◄ C_Max   Y_Max ►
◄ C_X-Colour

Threshold

Threshold
10
◄ Preset

BiasAutoTh

BiasAutoTh
1
◄ Preset

SpatTemp

◄ SpatTemp
◄ Horiz......   Vert-Temp... ►

Vert-Temp

◄ Off
◄ Vert-Min   PrismMin ►
◄ Vert-Med   PrismMed ►
◄ Vert-Max   Adaption... ►

Adaption

◄ Core_Min
◄ Core_Med   Gain_Min ►
◄ Core_Max   Gain_Max ►

Horiz

◄ C_Off   Y_Off ►
◄ C_Med   Y_Med ►
◄ C_Max   Y_Max ►
                   Boost... ►

Boost

◄ Neg
◄ Off
◄ Min
◄ Max

ProcAmp

◄ BypassProcAmp Y_Gain ►
◄ PicturePos   C_Gain ►
◄ YC_Delay   BlackLevel ►

YC_Delay

YC_Delay
0ns
◄ Preset

Black_Level

Black_ Level
0.0mV
◄ Preset

C_Gain

C_Gain
0.0dB
◄ Preset

Y_Gain

Y_Gain
0.0dB
◄ Preset

Picture Position

Picture Position
0ns
◄ Preset

IQDCPP
Menu System

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.
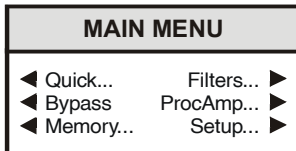
MENU DETAILS
(see IQDCPP Menu System opposite)

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.

```
┌─────────────────────────────┐
│         MAIN MENU           │
├─────────────────────────────┤
│ ◄ Quick...        Filters... ►│
│ ◄ Bypass        ProcAmp... ►│
│ ◄ Memory...       Setup... ►│
└─────────────────────────────┘
```

◄ 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.

```
┌─────────────────────────────┐
│           Quick             │
├─────────────────────────────┤
│ ◄ Input A        Input B ►  │
│ ◄ Strength    StrengthSel ► │
│ ◄ Recursive   +SemiTrans ►  │
│ ◄ SpatTemp        Freeze ►  │
│ ◄ 8bit_Rnd       Pattern ►  │
│ ◄ SpltScrnOff               │
└─────────────────────────────┘
```
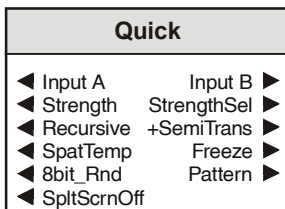
◄ Input A   Input B ►

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.

◄ Strength
When this item is selected the StrengthSel function will be enable and the pre-processing strength is set to the current value of the StrengthSel control.

Default is to not enabled.

StrengthSel ►

```
┌─────────────────────────────┐
│        StrengthSel          │
├─────────────────────────────┤
│ StrengthSel                 │
│ 7                           │
│ ◄ Preset                    │
└─────────────────────────────┘
```
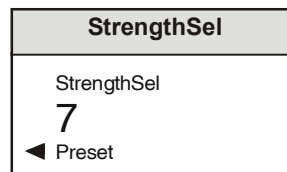
When **Strength** is enabled this item will allow the pre-processing strength to be adjusted.

The default value is no pre-processing; 0 strength.

◄ 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 Semi 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.

◄ **SpatTemp**

When selected this enables the spatial-temporal filters. This function toggles between enabled and disabled.
When disabled it is impossible to have vertical or horizontal or prism filtering, irrespective of the settings for "vert" or "horiz" or "prism".

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

◄ **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 ►

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.

◄ **SpltScrnOff**

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…**
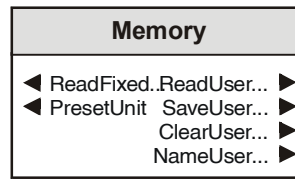
Memory
◄ ReadFixed..ReadUser... ►
◄ PresetUnit   SaveUser... ►
ClearUser... ►
NameUser... ►

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.
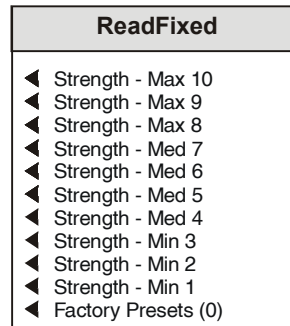
ReadFixed
◄ Strength - Max 10
◄ Strength - Max 9
◄ Strength - Max 8
◄ Strength - Med 7
◄ Strength - Med 6
◄ Strength - Med 5
◄ Strength - Med 4
◄ Strength - Min 3
◄ Strength - Min 2
◄ Strength - Min 1
◄ Factory Presets (0)

The options are:

Strength - Max 10
Strength - Max 9
Strength - Max 8
Strength - Med 7
Strength - Med 6
Strength - Med 5
Strength - Med 4
Strength - Min 3
Strength - Min 2
Strength - Min 1
Factory Presets (0)

The default for this function is Factory Presets (0).
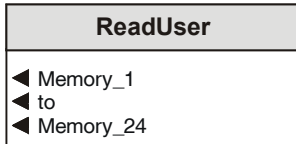
Details of the Fixed (Pre-Defined) Memory Settings

Application	Recursive	Semi-Transversal	Prism	Vert	Horiz
Strength Max 10	On Y max C max Thres – Auto Bias 0	On	Off	Max	Y – max C - max Boost – neg
Strength Max 9	On Y max C max Thres – Auto Bias 0	On	Off	Max	Y – max C – max Boost – off
Strength Max 8	On Y max C max Thres – Auto Bias 0	On	Med Core – max Gain – min	Off	Y – max C – max Boost – neg
Strength Med 7	On Y max C max Thres – Auto Bias 0	On	Med Core – max Gain – min	Off	Y – max C – max Boost – off
Strength Med 6	On Y max C max Thres – Auto Bias 0	On	Med Core – max Gain – min	Off	Y – max C – max Boost – min
Strength Med 5	On Y max C max Thres – Auto Bias 0	On	Med Core – max Gain – min	Off	Y-off C-off Boost – off
Strength Med 4	On Y max C max Thres – Auto Bias 0	On	Med Core – max Gain – min	Off	Y-off C-off Boost – min
Strength Min 3	On Y max C max Thres – Auto Bias 0	On	Min Core – min Gain – max	Off	Y-off C-off Boost – off
Strength Min 2	On Y max C max Thres – Auto Bias 0	On	Off	Off	Y-off C-off Boost – off
Strength Min 1	On Y med C med Thres – Auto Bias 0	On	Off	Off	Y-off C-off Boost – off
Factory Pre-sets (0)	Off	Off	Off	Off	Y-Off C-Off Boost – off

◄ **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.
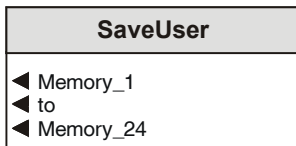
ClearUser
◄ Memory_1
◄ to
◄ Memory_24

NameUser… ►

This item is used to give a user-friendly name to a user defined memory location.
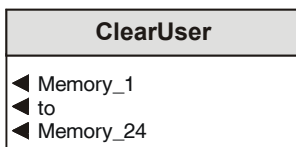
NameUser
◄ Memory_1
◄ to
◄ Memory_24
◄ PresetAllUserNames
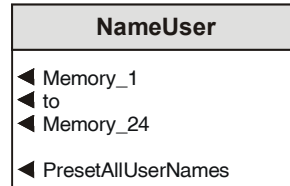
This will reveal a list of the 24 memory locations that may be given a specific name. To rename a memory location when operating in a particular standard, select:

Select the memory location to be renamed e.g.

◄ Memory_1

Memory_x_Name	
Memory_x_Name	
◄ *Memory_x_Name*	►
◄ Clear	
◄ Preset	OK ►
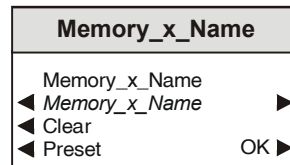
To compile/edit the text the right ► and left ◄ buttons adjacent to the upper text line in the menu should be used to select the character position in the text and the spinwheel used to select the character.

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.

Filters
◀ BypassFltrs
◀ Recursive... SpatTemp... ▶

◀ BypassFltrs

When enabled the input signal will pass through to the output unprocessed by the module's recursive, semi-transversal, horizontal, vertical and prism filters.
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	
◀ Recursive	+SemiTrans ▶
◀ Threshold	BiasAutoTh ▶
◀ Level...	
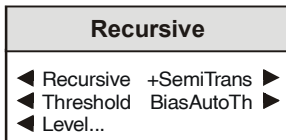
◀ Recursive

This item allows the Recursive Noise filtering to be enabled.

Preset is to Off.

◀ 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.
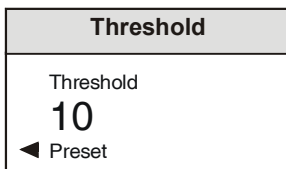
Threshold
Threshold
10
◀ Preset

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.

Level	
◀ C_Off	Y_Off ▶
◀ C_Min	Y_Min ▶
◀ C_Med	Y_Med ▶
◀ C_Max	Y_Max ▶
◀ C_X-Colour	
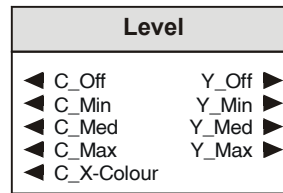
The Luminance level may be set to Off, Minimum, Medium or Maximum.

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 Min.

+SemiTrans ▶

This item allows Semi 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.

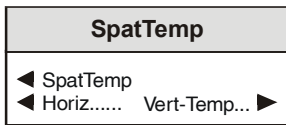| BiasAutoTh |
|---|
| BiasAutoTh |
| 1 |
| ◀ Preset |
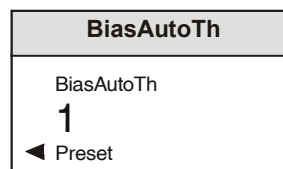
Modifications of the bias should not be necessary under normal conditions. The allowed range is from –3 (less noise reduction) to +3 (more noise reduction).
The preset for this function is 0.

SpatTemp… ▶

This item will reveal a menu for setting up the Spatial-Temporal filtering capabilities.
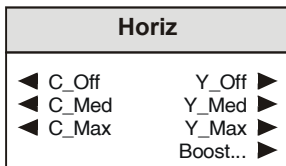
```
┌─────────────────────────────────┐
│          SpatTemp               │
├─────────────────────────────────┤
│ ◄ SpatTemp                      │
│ ◄ Horiz......   Vert-Temp... ▶  │
└─────────────────────────────────┘
```

◄ SpatTemp

When selected the Spatial-Temporal filtering function will be activated.

◄ Horiz…

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

```
┌─────────────────────────────────┐
│            Horiz                │
├─────────────────────────────────┤
│ ◄ C_Off            Y_Off ▶      │
│ ◄ C_Med            Y_Med ▶      │
│ ◄ C_Max            Y_Max ▶      │
│                    Boost... ▶   │
└─────────────────────────────────┘
```

Chrominance Settings

These values set the strength of the horizontal bandwidth limiting applied to the chrominance signal. When it is set to **C-Off**, full bandwidth is maintained horizontally. For medium chrominance bandwidth reduction, **C_Med** is chosen and **C_Max** for maximum bandwidth reduction.

Thus the options are C_Off, C_Med, C_Max.

The default setting is C_Off.

Luminance Settings

These values set the strength of the horizontal bandwidth limiting applied to the luminance signal. When it is set to **Y-Off**, full bandwidth is maintained horizontally. For medium luminance bandwidth reduction, **Y_Med** is chosen and **Y_Max** for maximum bandwidth reduction.

Thus the options are Y_Off, Y_Med, Y_Max.

The default setting is Y_Off.

Boost ▶

This function concerns the overall perception of picture sharpness. By decreasing the bandwidth, the picture can appear to be very soft. The perceived sharpness can be greatly changed. To rectify this, some boost can be added to the picture.

```
┌─────────────────────────────────┐
│            Boost                │
├─────────────────────────────────┤
│ ◄ Neg                           │
│ ◄ Off                           │
│ ◄ Min                           │
│ ◄ Max                           │
└─────────────────────────────────┘
```
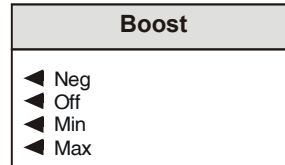
To maximise this effect, the **Max** boost setting is used. It is not necessary to have boost as it can be set to **Off**. A small amount of boost can be obtained by using the **Min** setting.

If desired, a form of de-enhancement to make the picture softer may be applied. This can be achieved by setting the boost control to **Neg**.

Thus the options are Neg, Off, Min, Max.

The default setting is Off.

Vert-Temp ▶

This function determines the strength of the vertical bandwidth limiting applied.
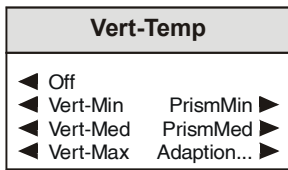
Vert-Temp	
◀ Off	
◀ Vert-Min	PrismMin ▶
◀ Vert-Med	PrismMed ▶
◀ Vert-Max	Adaption... ▶

When it is set to Off, full bandwidth is maintained vertically. For the smallest vertical bandwidth reduction, Vert-Min is selected. Similarly for maximum bandwidth reduction, Vert-Max is chosen. Vert-Med provides a strength between "min" and "max".

PrismMin/Med ▶

When these are selected the filter is put into its motion adaptive mode. Where there is no motion, a spatial-temporal filter is applied, thus maximising the pre-processing obtained. Either a minimum (PrismMin) or a medium (PrismMed) strength may be selected.

Other selections available are medium (Vert-med) and maximum (Vert-Max).

The pre-set for this function is Off.

Adaption ▶

This function enables a bias to the decision making to be applied when using the vertical filter in its adapt mode. The bias suggests to the arbitrar that there needs to be more emphasis on motion or alternatively on noise.

Adaption	
◀ Core_Min	
◀ Core_Med	Gain_Min ▶
◀ Core_Max	Gain_Max ▶
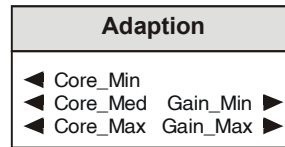
Gain Settings

With fast moving footage, the gain should be set to Gain_Max. This would typically be used, for example, with sports coverage.
For programmes based in a studio, for example, the Gain_Min setting would be more appropriate as it is unlikely to include fast motion.

The default setting for this is Gain_Min.

Coring Settings

Where extra noise reduction is required, the coring setting should be set to Core_Max.
Where a smaller contribution from the spatial-temporal filter is required, the coring setting should be set to Core_Min.

Normally this setting will be at Core_Med.

ProcAmp... ▶

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

```
┌─────────────────────────────────┐
│           ProcAmp               │
├─────────────────────────────────┤
│ ◄ BypassProcAmp  Y_Gain ▶       │
│ ◄ PicturePos     C_Gain ▶       │
│ ◄ YC_Delay     BlackLevel ▶     │
└─────────────────────────────────┘
```
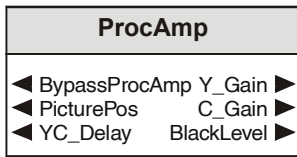
◄ BypassProcAmp

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.

```
┌─────────────────────────────────┐
│        Picture Position         │
├─────────────────────────────────┤
│  Picture Position               │
│  0ns                            │
│ ◄ Preset                        │
└─────────────────────────────────┘
```

By using the spinwheel the timing may be adjusted by ±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.

```
┌─────────────────────────────────┐
│           YC_Delay              │
├─────────────────────────────────┤
│  YC_Delay                       │
│  0ns                            │
│ ◄ Preset                        │
└─────────────────────────────────┘
```
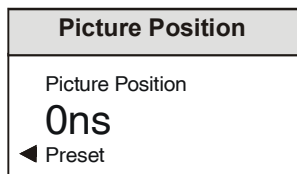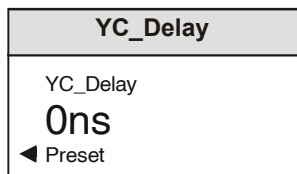
By using the spinwheel the timing may be adjusted by ±444 ns in 148 ns steps.

Y_Gain ▶

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

```
┌─────────────────────────────────┐
│            Y_Gain               │
├─────────────────────────────────┤
│  Y_Gain                         │
│  0.0dB                          │
│ ◄ Preset                        │
└─────────────────────────────────┘
```
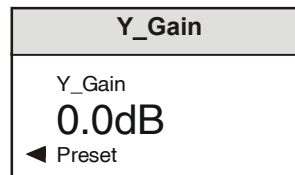
By using the spinwheel the gain may be adjusted by ±6 dB in steps of 0.1 dB.

C_Gain ▶

This item allows the gain of the chrominance signal to be adjusted.
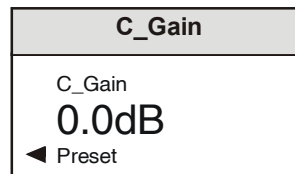
```
┌─────────────────────────────────┐
│            C_Gain               │
├─────────────────────────────────┤
│  C_Gain                         │
│  0.0dB                          │
│ ◄ Preset                        │
└─────────────────────────────────┘
```

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

BlackLevel ▶

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

```
┌─────────────────────────────────┐
│          Black_Level            │
├─────────────────────────────────┤
│  Black_ Level                   │
│  0.0mV                          │
│ ◄ Preset                        │
└─────────────────────────────────┘
```
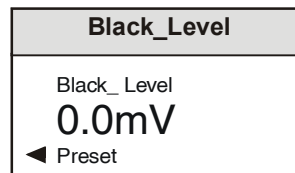
The pedestal may be adjusted by ±100 mV in steps of 0.8 mV.

Setup… ►

This item allows parameters to be configured.

Setup
◄ Spliit_Screen...
◄ Video...
◄ Pattern_Enable
◄ Pattern_Select
◄ Panel_Display...
◄ RollTrack...
◄ RollTrack_Messages
◄ EDH...
◄ GPI_Inputs...
◄ Logging...
◄ Preset_Unit
◄ Software_Version
◄ SerialNumber
◄ Restart
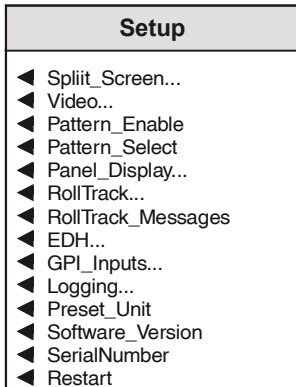
◄ Split_Screen…

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.

Split Screen
◄ SplitSelect...
◄ BorderSelect...
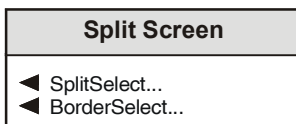
◄ SplitSelect…

This item allows the way the screen is split.

SplitSelect	
◄ Off	HorizRepeat ►
◄ Left/Right	Top/Bottom ►
◄ Inverse	

◄ Off
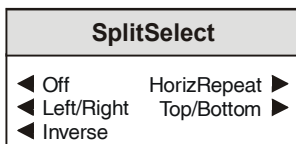
This will disable the split screen function.

◄ 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. If 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.

BorderSelect
◄ Off
◄ Black
◄ White
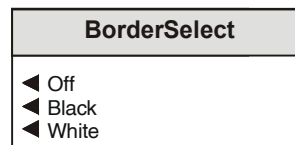
Options are:

Off	No border between the processed an unprocessed image.
Black	A black border between the processed an unprocessed image.
White	A white border between the processed an 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 ►

◄ AllThro'

When enabled this will Pass through all VBI data unprocessed.

All blank ►

When selected all VBI data lines will be blanked.

◄ 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.

```
        Panel Display

  ◄ AllFilters      Recursive ►
  ◄ Horizontal      Vert-Temp ►
  ◄ ProcAmp              EDH ►
  ◄ Auto Loop
```
Default is **AllFilters**

```
                Information

        01:IQDCPP
        InputA:OK
        EDH:None
        RecOn Ymn Cmn 05 -2

        1st   2nd   3rd   4th   5th
       Field Field Field Field Field
```
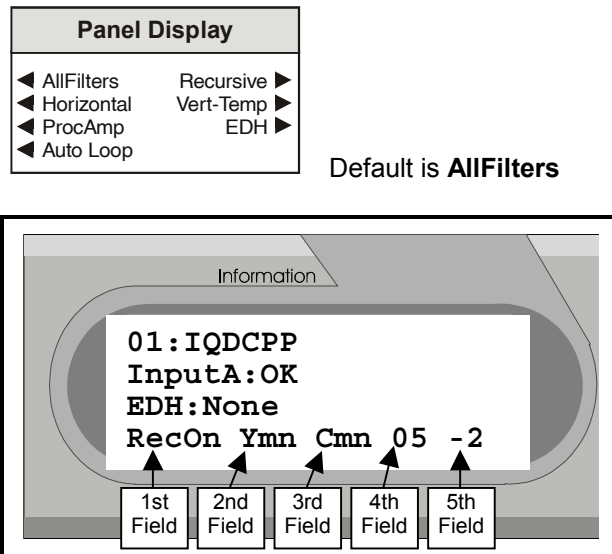
◄ AllFilters

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

REC: Recursive
TRN: Semi-Transversal
HORZ: Horizontal
VERT: Vertical
PRSM: Prism

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 forth 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.

◄ Horizontal

This indicates a partial status of the horizontal bandwidth filter.

The first field will be either HRZon or HRZof, indicating whether or not the horizontal filter has been enabled. This is dependent on the "SpatlTemp" control being enabled/disabled.

The second field will be either HYof, HYmd, HCmx, indicating the strength of the luminance horizontal bandwidth reduction has been set to off, medium or maximum.

The third field will be either HCof, HCmd, HCmx, indicating the strength of the chrominance horizontal bandwidth reduction has been set to off, medium or maximum.

The fourth field will be either Bng, Bof, Bmn, Bmx, indicating the strength of the Boost has been set to negative (de-enhancement), off, minimum or maximum.

Vert-Temp ►

This indicates a partial status of the Prism and vertical bandwidth filters.

The first field will be either V-Ton or V-Tof, indicating whether or not the prism and vertical filter have been enabled. This is dependent on the "SpatlTemp" control being enabled/disabled.

The second field will be either Vof, Vmn, Vmd, Vmx, indicating the strength of the vertical bandwidth reduction has been set to off, medium or maximum.

The third field will be either Pof, Pmn, Pmd, indicating the Prism filter is off, minimum or medium strength.

The fourth field will be either Cmn, Cmd, Cmx, indicating the setting of the adaption coring for the Prism filter has been set to minimum, medium or maximum.

The fifth field will be either Gmn,, Gmx, indicating the setting of the adaption gain for the Prism filter has been set to minimum or maximum.

◄ 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 the entire (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.
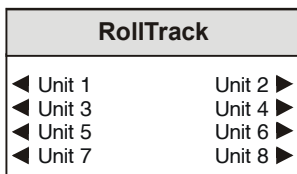
RollTrack	
◄ Unit 1	Unit 2 ►
◄ Unit 3	Unit 4 ►
◄ Unit 5	Unit 6 ►
◄ Unit 7	Unit 8 ►

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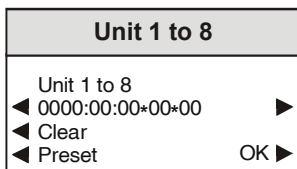
To change the address the right ► and left ◄ buttons adjacent to the upper text line in the menu should be used to select the character position in the text and the spinwheel used to select the character.

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
IQDANR	179

And for this module

IQDCPP	269

◄ **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
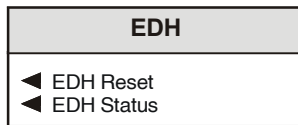
◄ EDH Reset

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 ►
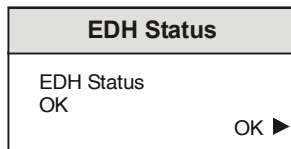
◄ GPI_Inputs

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_Inputs
◄ GPI_1...   GPI_2... ►
◄ GPI_3...
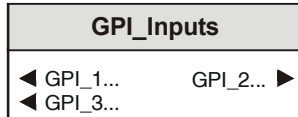
◄ GPI_1, 2, 3

The GPI input has four user selectable modes of operation:

GPI_1/2/3
◄ Off
◄ Latch
◄ Edge
◄ GPI_1, 2, 3_Function

◄ Off
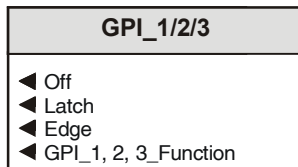
Function inactive

◄ 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:
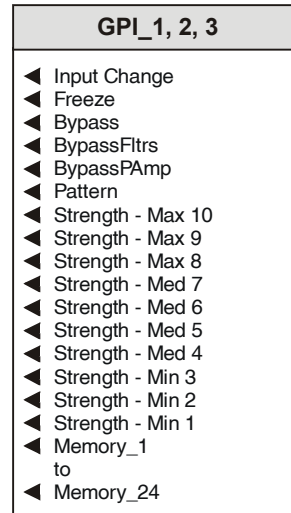
GPI_1, 2, 3
◄ Input Change
◄ Freeze
◄ Bypass
◄ BypassFltrs
◄ BypassPAmp
◄ Pattern
◄ Strength - Max 10
◄ Strength - Max 9
◄ Strength - Max 8
◄ Strength - Med 7
◄ Strength - Med 6
◄ Strength - Med 5
◄ Strength - Med 4
◄ Strength - Min 3
◄ Strength - Min 2
◄ Strength - Min 1
◄ Memory_1
to
◄ Memory_24

◄ Logging

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

Logging
◄ Log Input State
◄ Log EDH State
◄ Log Split Screen
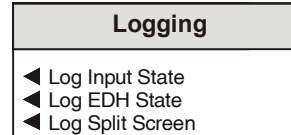
Selecting this item reveals a display that allows information about three parameters to be made available for logging.

◄ 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 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.

+Semi Transversal

This item allows Semi 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 – Temporal

Turning the Enable/Disable box to "disable" results in no horizontal, vertical or Prism filtering. With the box set to "enable", the resultant filtering depends on the individual setting for each of the three filters.

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.

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.
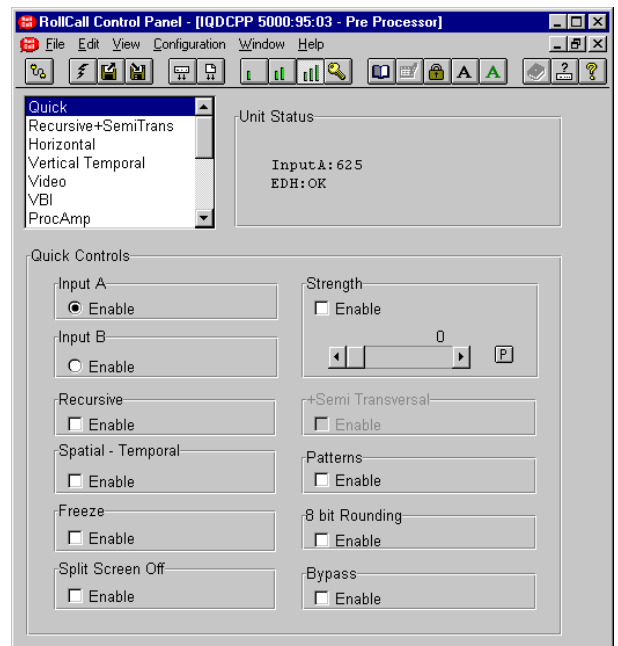
8 Bit Rounding

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.

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.

Semi Transversal

This item allows Semi 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 color 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.
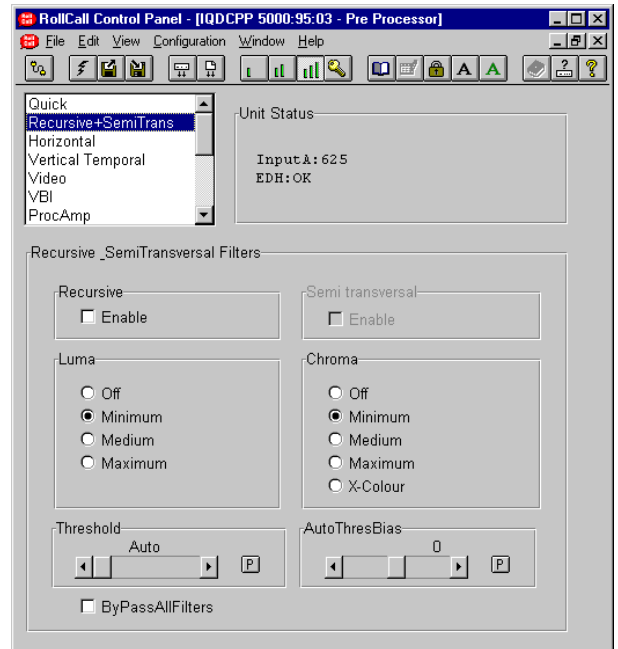
Threshold

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 input signal will pass through to the output unprocessed by the module's recursive, semi-transversal, horizontal, vertical and prism filters. A delay is automatically inserted that is equivalent to any previous processing delay so that the input to output delay is unchanged.

Horizontal

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

Spatial – Temporal

Turning the Enable/Disable box to "disable" results in no horizontal, vertical or Prism filtering. With the box set to "enable", the resultant filtering depends on the individual setting for each of the three filters.

Luma Strength

These values set the strength of the horizontal bandwidth limiting applied to the luminance signal. When it is set to **Y-Off**, full bandwidth is maintained horizontally. For medium luminance bandwidth reduction, **Y_Med** is chosen and **Y_Max** for maximum bandwidth reduction.

Thus the options are Y_Off, Y_Med, Y_Max.

The default setting is Y_Off.

Luma Boost

This function concerns the overall perception of picture sharpness. By decreasing the bandwidth, the picture can appear to be very soft. The perceived sharpness can be greatly changed. To rectify this, some boost can be added to the picture.

To maximise this effect, the **Max** boost setting is used. It is not necessary to have boost as it can be set to **Off**. A small amount of boost can be obtained by using the **Min** setting.

If desired, a form of de-enhancement to make the picture softer may be applied. This can be achieved by setting the boost control to **Negative**.

Thus the options are Negative, Off, Min, Max.

The default setting is Off.
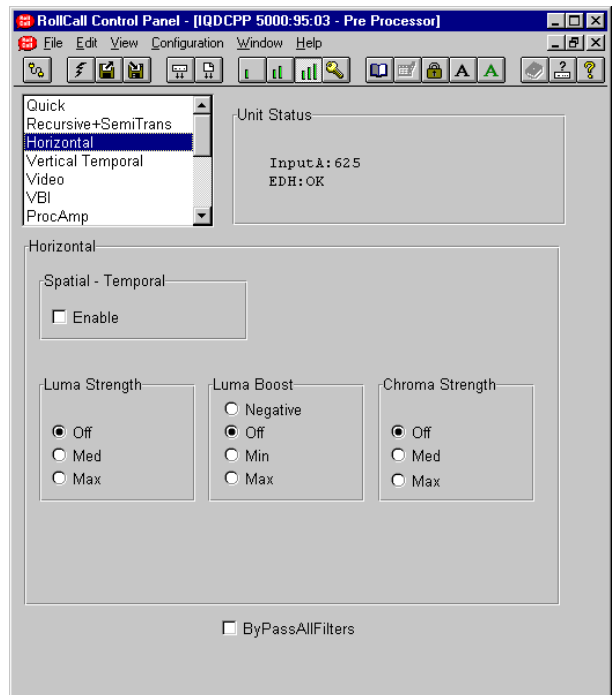
Chroma Strength

These values set the strength of the horizontal bandwidth limiting applied to the chrominance signal. When it is set to **C-Off**, full bandwidth is maintained horizontally. For medium chrominance bandwidth reduction, **C_Med** is chosen and **C_Max** for maximum bandwidth reduction.

Thus the options are C_Off, C_Med, C_Max.

The default setting is C_Off.

Bypass All Filters

When enabled the input signal will pass through to the output unprocessed by the module's recursive, semi-transversal, horizontal, vertical and prism filters. A delay is automatically inserted that is equivalent to any previous processing delay so that the input to output delay is unchanged.

Vertical Temporal

This function determines the strength of the vertical bandwidth limiting applied.

Spatial-Temporal

When the enable function is unchecked, no vertical bandwidth limiting will be applied.

Vert/Prism Selection

Three settings are provided for the vertical-temporal filter's vertical control.

When it is set to Off, full bandwidth is maintained vertically. For the smallest vertical bandwidth reduction, Vertical-Min is selected. Similarly for maximum bandwidth reduction, Vertical-Max is chosen. Vertical-Med provides a strength between min and max.

Note that maximum means maximum strength of vertical filtering.

Prism-Min/Prism-Med

When these are selected the filter is put into its motion adaptive mode. Where there is no motion, a spatial-temporal filter is applied, thus maximising the pre-processing obtained. Either a minimum (PrismMin) or a medium (PrismMed) strength may be selected.

The pre-set for this function is neither selected.
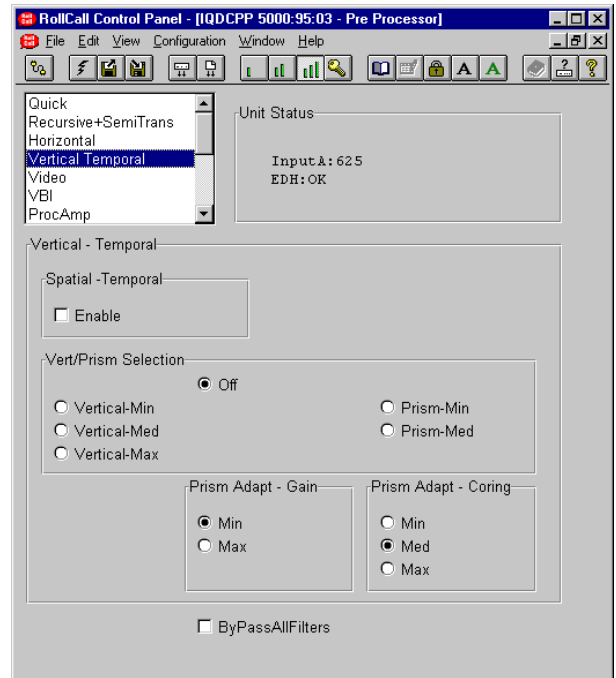
Prism Adaption

This function enables a bias to the decision making to be applied when using the vertical filter in its adapt mode. The bias suggests to the arbitrar that there needs to be more emphasis on motion or alternatively on noise.

Prism Adapt - Gain

With fast moving footage, the gain should be set to **Max**. This would typically be used, for example, with sports coverage.
For programmes based in a studio, for example, the **Min** setting would be more appropriate as it is unlikely to include fast motion.

Prism Adapt - Coring

Where extra noise reduction is required, the coring setting should be set to **Max**.
Where a smaller contribution from the spatial-temporal filter is required, the coring setting should be set to **Min**.

Normally this setting will be at **Med**.

Bypass All Filters

When enabled the input signal will pass through to the output unprocessed by the module's recursive, semi-transversal, horizontal, vertical and prism filters. A delay is automatically inserted that is equivalent to any previous processing delay so that the input to output delay is unchanged.

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
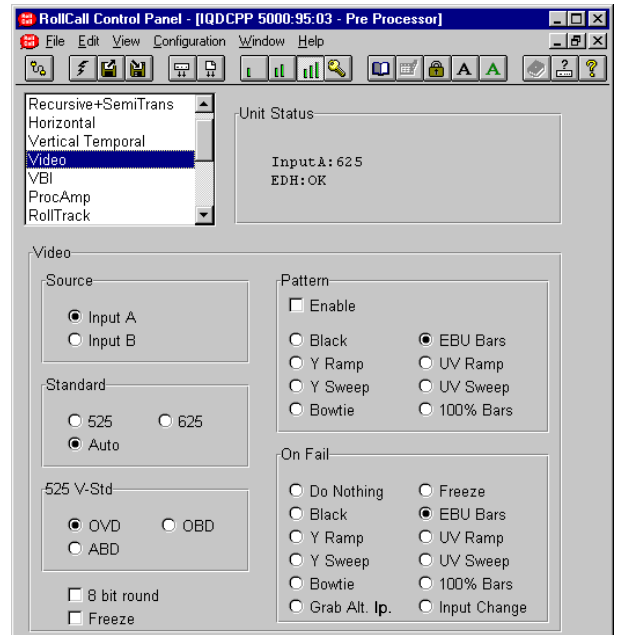
On Fail

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 (Grabs a frozen picture from the other input if the selected input fails)	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.
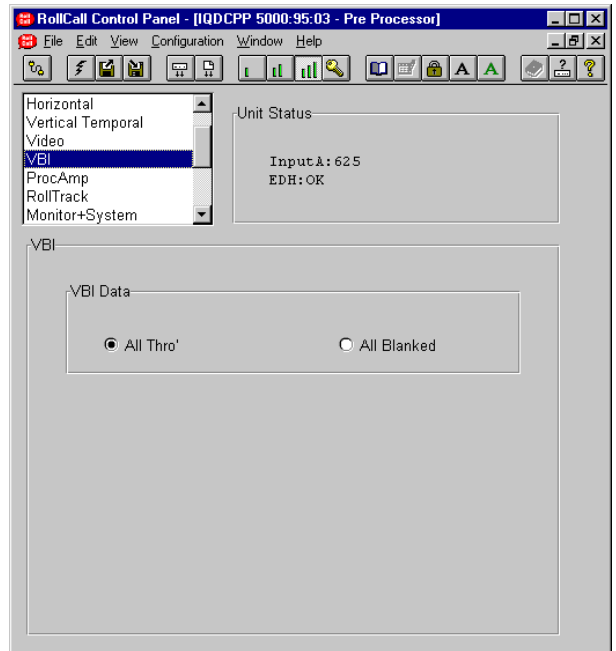
The preset for this function is Off.

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'   Passes all VBI data unprocessed

◉ All Blanked   Blanks all VBI data

The preset for this function is All-Thro'.

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 [P] 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 ±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 ±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 ±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 ±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 ±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.
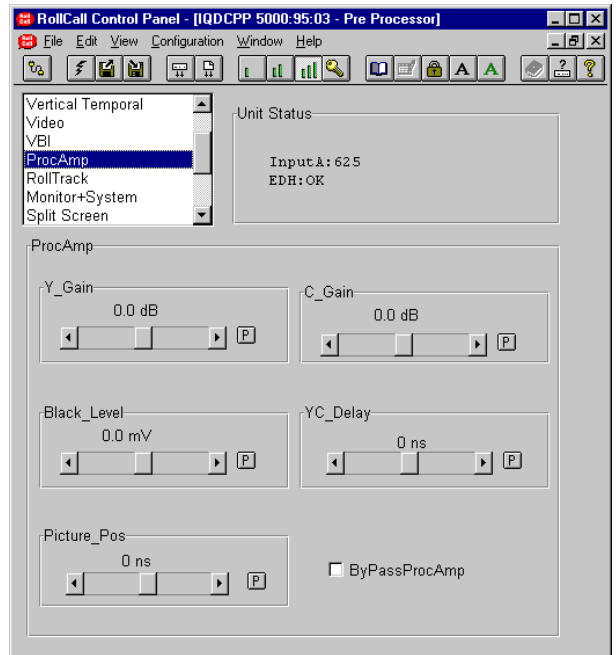
RollTrack

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 icon] (return)

![P icon] (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

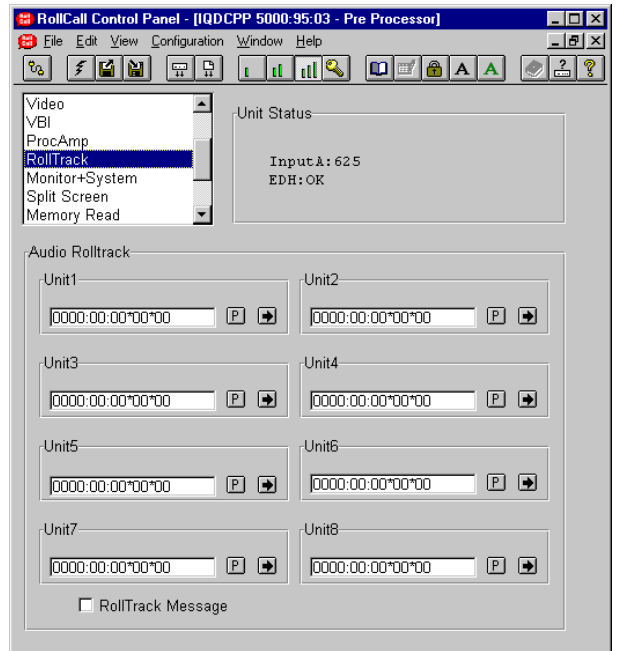The second set (10) is the number identifying the (enclosure/mainframe) unit

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
IQDANR	179
And for this module	
IQDCPP	269

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.
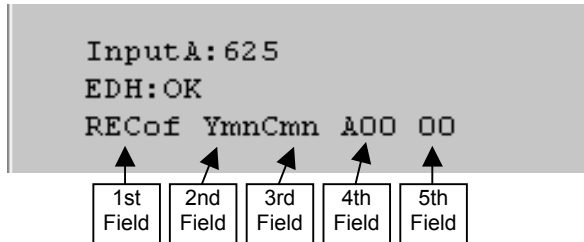
Default is **Normal**

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
HORZ: Horizontal
VERT: Vertical
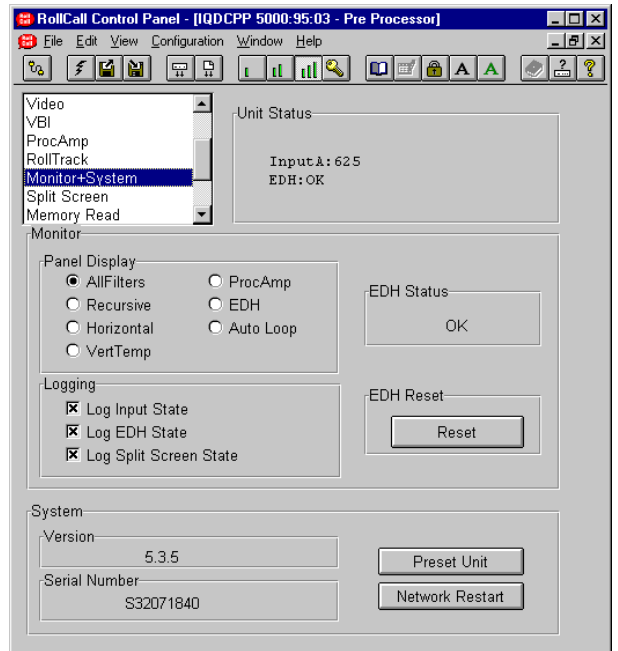PRSM: Prism

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 forth 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.

Horizontal

This indicates a partial status of the horizontal bandwidth filter.

The first field will be either HRZon or HRZof, indicating whether or not the horizontal filter has been enabled. This is dependent on the "SpatlTemp" control being enabled/disabled.

The second field will be either HYof, HYmd, HCmx, indicating the strength of the luminance horizontal bandwidth reduction has been set to off, medium or maximum.

The third field will be either HCof, HCmd, HCmx, indicating the strength of the chrominance horizontal bandwidth reduction has been set to off, medium or maximum.

The fourth field will be either Bng, Bof, Bmn, Bmx, indicating the strength of the Boost has been set to negative (de-enhancement), off, minimum or maximum.

Monitor + System (continued)

Panel Display (continued)

VertTemp

This indicates a partial status of the Prism and vertical bandwidth filters.

The first field will be either V-Ton or V-Tof, indicating whether or not the prism and vertical filter have been enabled. This is dependent on the "SpatlTemp" control being enabled/disabled.

The second field will be either Vof, Vmn, Vmd, Vmx, indicating the strength of the vertical bandwidth reduction has been set to off, medium or maximum.

The third field will be either Pof, Pmn, Pmd, indicating the Prism filter is off, minimum or medium strength.

The fourth field will be either Cmn, Cmd, Cmx, indicating the setting of the adaption coring for the Prism filter has been set to minimum, medium or maximum.

The fifth field will be either Gmn,, Gmx, indicating the setting of the adaption gain for the Prism filter has been set to minimum or maximum.
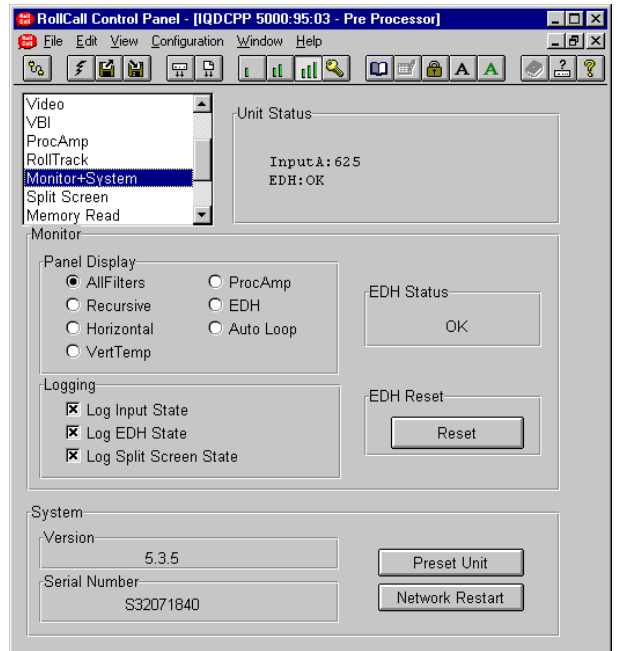
ProcAmp

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.
The default for this sub-menu is Normal.

Monitor + System (continued)

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.
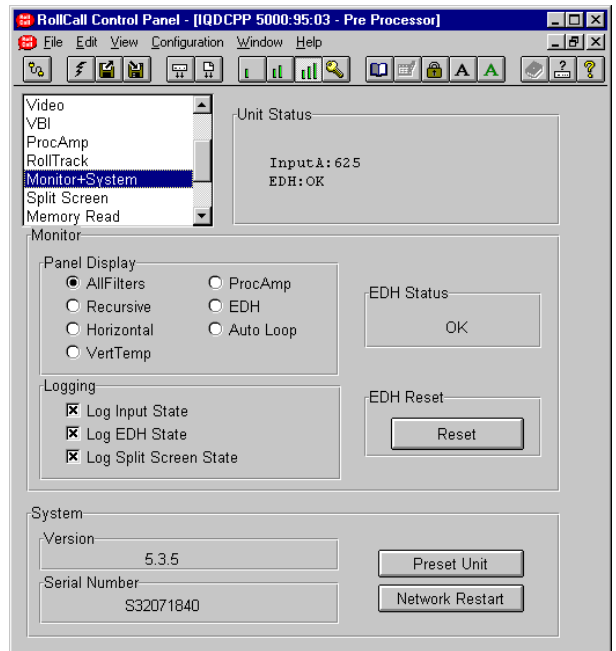
Serial Number

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. If serves no function if Split Screen is set to Off.
The preset value is Off.

The preset for the border is Off.
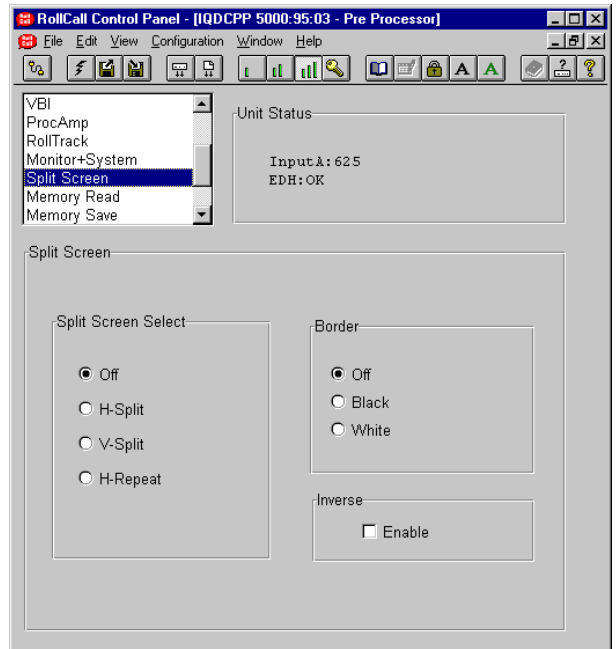
Border

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 an unprocessed image.
Black   A black border between the processed an unprocessed image.
White   A white border between the processed an 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.

Read Fixed Memory

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

The options are:

⊙ Strength - Max 10
⊙ Strength - Max 9
⊙ Strength - Max 8
⊙ Strength - Med 7
⊙ Strength - Med 6
⊙ Strength - Med 5
⊙ Strength - Med 4
⊙ Strength - Min 3
⊙ Strength - Min 2
⊙ Strength - Min 1
⊙ Factory Defaults

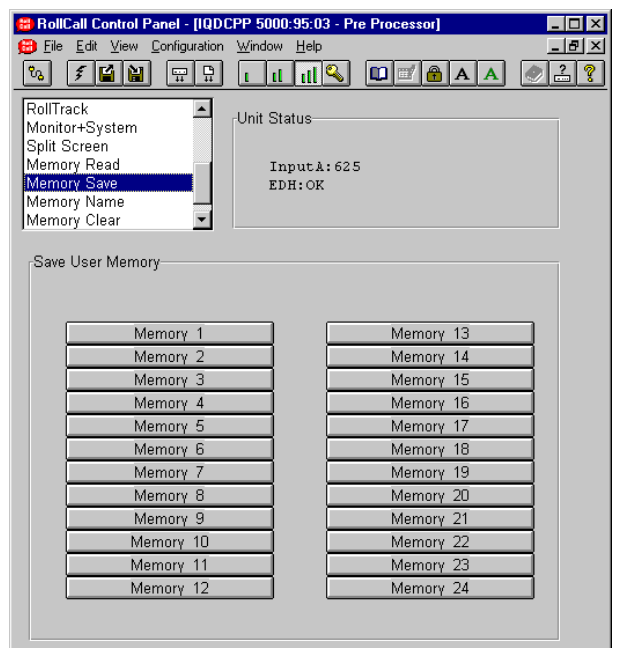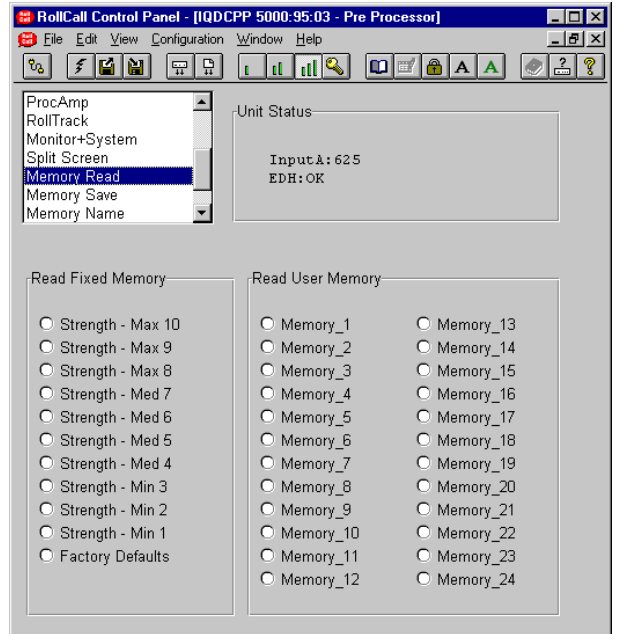The default for this function is Factory Defaults.

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.
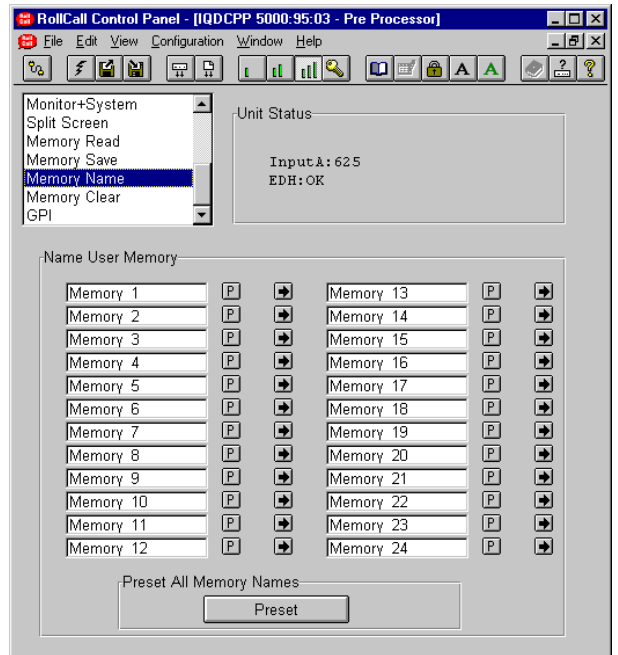
Memory Name

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)

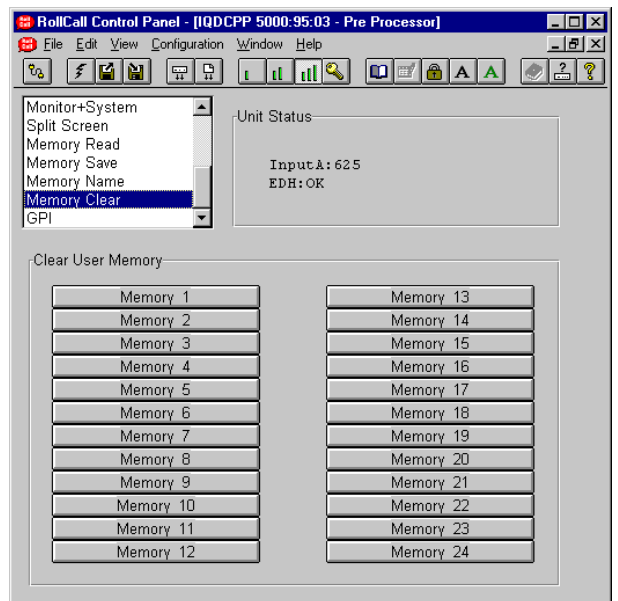🅿 (Preset) returns to the default name.

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 Input 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.

Manual Revision Record

Date	Version No.	Issue No.	Change	Comments
050302	1	1		First issue
100103	1	2	New software & –2A panel added	New manual released
100403	1	3	Power consumption added to techspec	New manual issued