

IQARC01 Fixed Mode Aspect Ratio Converter

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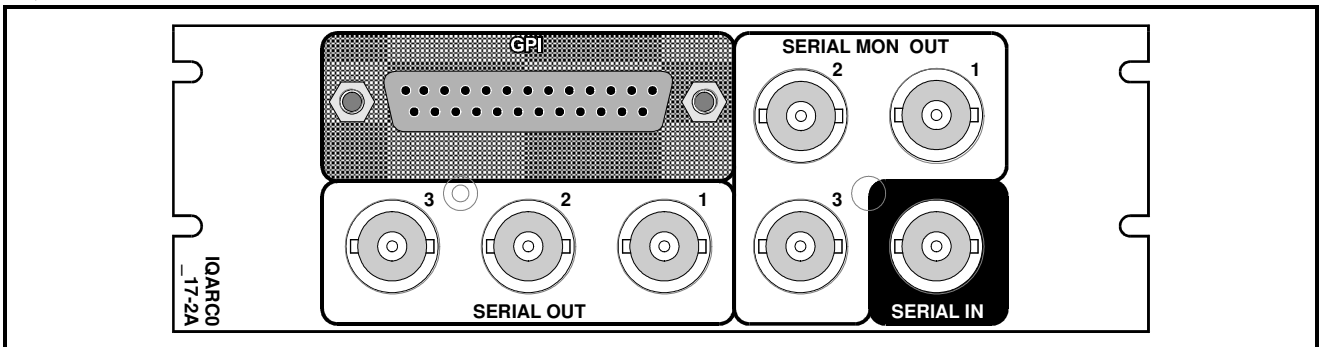
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Module Description

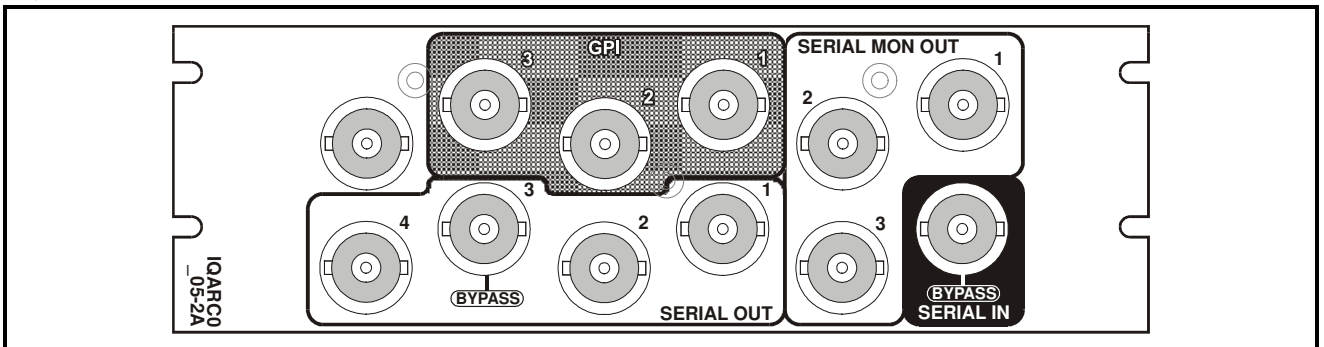
The IQARC01 is a 10-bit, bi-directional broadcast quality aspect ratio converter with serial digital input and outputs, plus serial digital monitoring outputs. A comprehensive selection of fixed conversion modes are available with ultra-smooth adjustment of picture position both horizontally and vertically.

Rear Panel Views

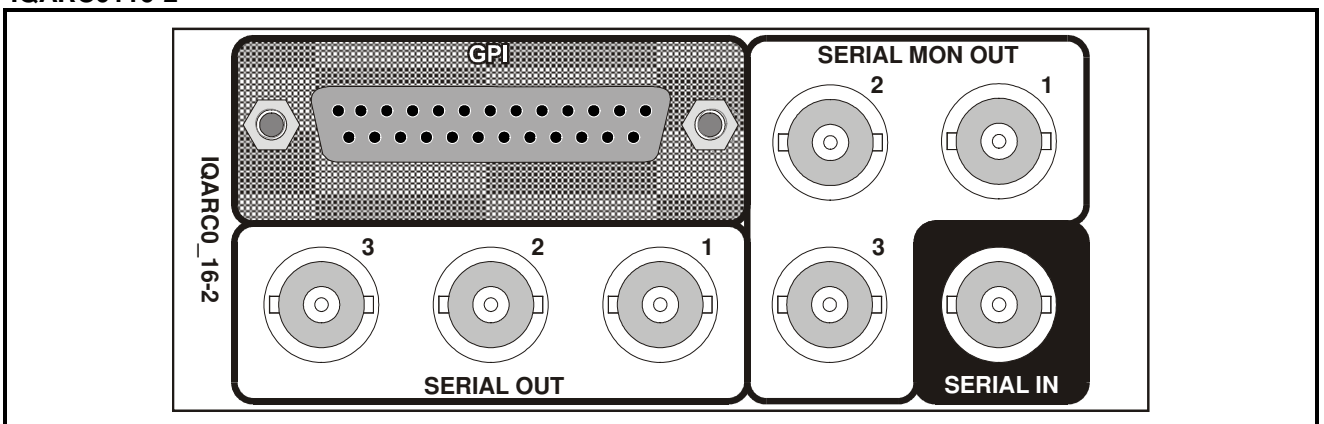
IQARC0117-2A



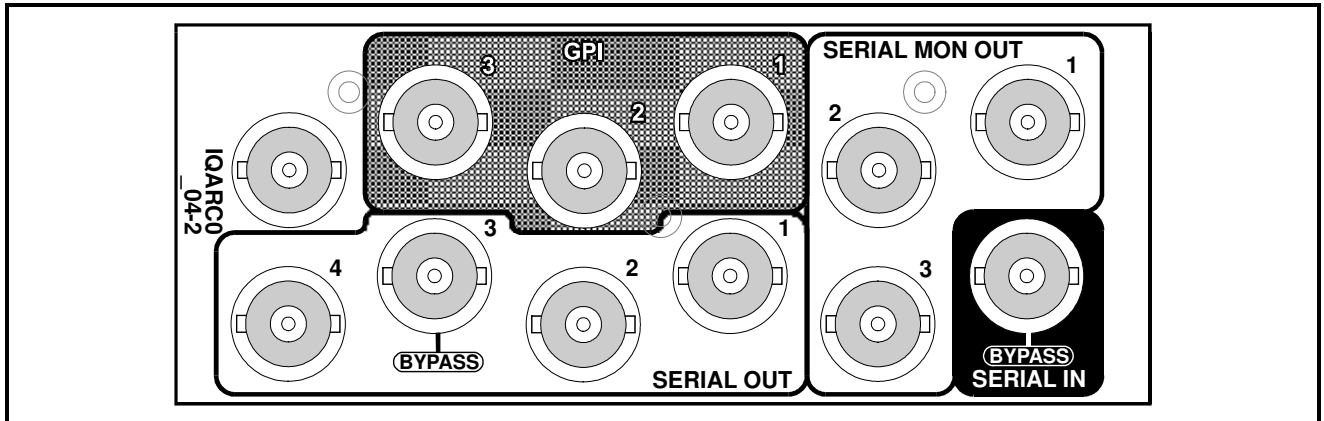
IQARC0105-2A



IQARC0116-2



IQARC0104-2



Versions of the module cards available are:

IQARC0104-2 SDI Fixed mode SDI Aspect Ratio Converter. 4 SDI outputs with relay input bypass/ 3 SDI monitoring outputs.

IQARC0105-2A SDI Fixed mode SDI Aspect Ratio Converter. 4 SDI outputs with relay input bypass/ 3 SDI monitoring outputs.

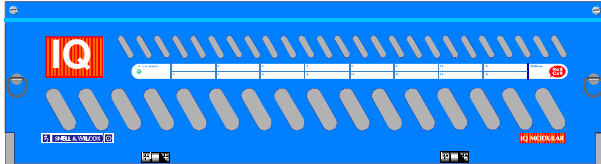
IQARC0116-2 Fixed mode SDI Aspect Ratio Converter. 3 SDI main/ 3 SDI monitoring outputs.

IQARC0117-2A Fixed mode SDI Aspect Ratio Converter. 3 SDI main/ 3 SDI monitoring outputs.

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

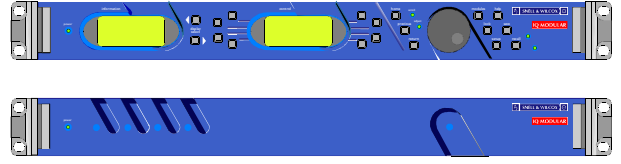
Rear panels **with** the suffix A may only be fitted into the 'A' style enclosure shown below.



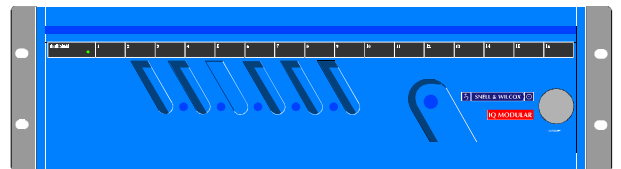
(Enclosure order codes IQH3A-E-0, IQH3A-E-P, IQH3A-0-0, IQH3A-0-P)

'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-0, IQH1S-RC-AP, IQH1U-RC-0, IQH1U-RC-AP, Kudos Plus Products)

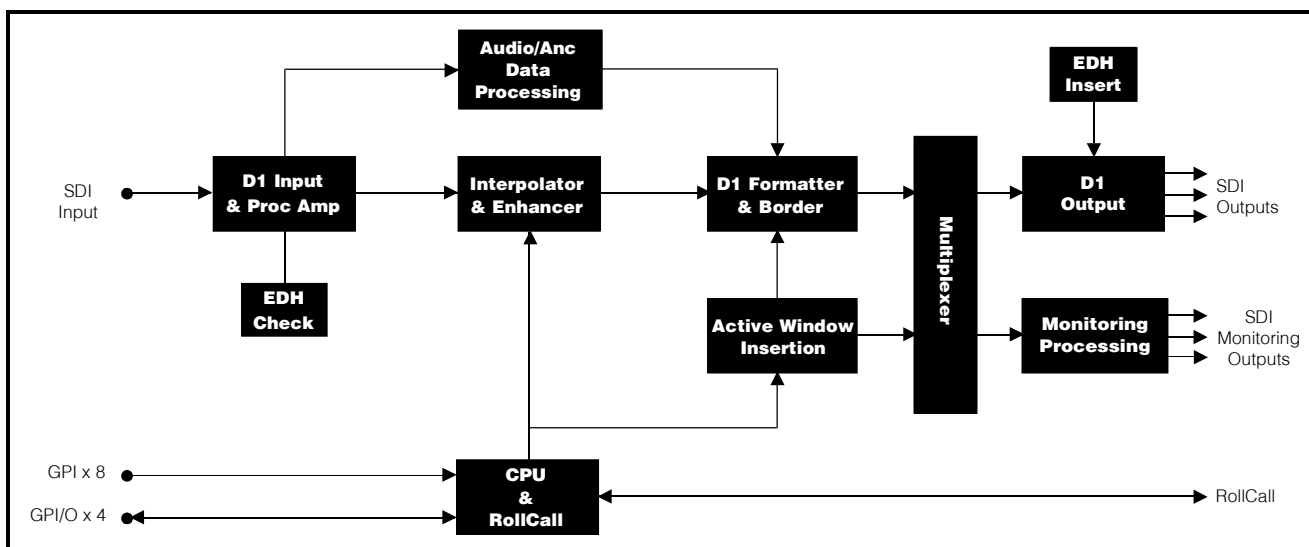


(Enclosure order codes IQH3N-0, IQH3N-P)



(Enclosure order codes IQH3U-RC-0, IQH3U-RC-P)

Block Diagram



Features

- Aspect ratio conversion using vertical-temporal filtering
- 9 fixed up and down conversion modes
- Ultra smooth dynamic pan & tilt
- Input and output blanking controls
- Composite monitoring outputs
- Transparent to horizontal and vertical interval data
- Background colour control
- Auto field freeze on input loss
- Un-interruptable valid output
- Pattern generation
- 8 GPI inputs and 4 input/outputs for rapid control
- 16 user definable memories
- RollTrack audio delay tracking
- Automatic 625 & 525 operation
- EDH checking and insertion to SMPTE RP165
- RollCall remote control and monitoring

Technical Profile

Signal Inputs

Serial Digital	1 x SDI
Standards	SMPTE 259M-C-1997 and embedded audio SMPTE 272M-A- 1994

Card Edge Controls (also available via RollCall)

Conversion Mode Select Terms

AA	Active image aspect ratio with reference to 9 (4:3 is 12:9 = 12)
B	Display Format P for pillar-box L for letter-box F for full-frame
CC	Raster aspect ratio with reference to 9 (4:3 is 12:9 = 12)

Conversion Mode Select

Input → Output	Comment (output)
12F12 → 12P16	16:9 pillar-box
12F12 → 14P16	16:9 pillar-box vertically cropped
12F12 → 16F16	Full 16:9 picture
16L12 → 12F12	Side cropped
16L12 → 14L12	Side cropped 14:9 letterbox
16L12 → 16F16	Full 16:9 picture
16F16 → 12F12	Side cropped
16F16 → 14L12	Side cropped 14:9 letterbox
16F16 → 16L12	16:9 letter box

Pan control Smooth adjustment across input
active picture

Tilt control Smooth adjustment across input
active picture

Specifications

Serial Input Return Loss	Better than 15 dB to 270 MHz
Maximum Input Cable length	>200 m (PSF1/2 or equiv. cable)
Serial Output Level	800 mV ±10%
Output Return Loss	Better than -15 dB to 270 MHz
Output Overshoot	<700 mV

Signal Outputs

Serial Digital	3 x SDI
Serial Digital	3 x SDI Monitoring
Standards	SMPTE 259M-C-1997 and embedded audio SMPTE 272M-A- 1994

Input blanking	Smooth adjustment of top, bottom, left and right
Output blanking	Smooth adjustment of top, bottom, left and right
Auto Freeze	Freeze on Input Loss (Default is Pattern Output)
Minimum Delay mode	On / Off
Background control	Black, Blue, Red Magenta, Green, Cyan, Yellow, White, Grey or 2 user Defined R, G, B
Pattern Select	Off, Black, EBU Bars, 100% Bars, Multiburst, Valid Ramp, Pulse and Bar, Green
Monitoring Output	Output Input and monitoring information / Aspect ratio converted output
Caption	Off / On
Ratio Terminology	WRT-9, PB/LB, Ratio
User Memories	16 recall locations
Standard	525 / 625 / Auto
Preset Unit	Returns all settings to factory defaults

Functions available via RollCall only

Logging	EDH, Input Loss, Input Standard, Unit mode
User Memories	16 save / recall
RollTrack	Video Delay, Input Present, Input Missing, Input Standard
GPI configuration	Select the function of each GPI input and output from a predefined list of options

Output Jitter	< 0.2UI
Delay	Normal: 1Frame plus approx. 37 µS or Min Delay: approx. 37 µS

Power Consumption

Module Power Consumption	13.5W max
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INPUT CONNECTIONS

Serial Digital Video Input

The serial digital input to the unit is made via this BNC connector which terminates in 75 Ohms.



Bypass

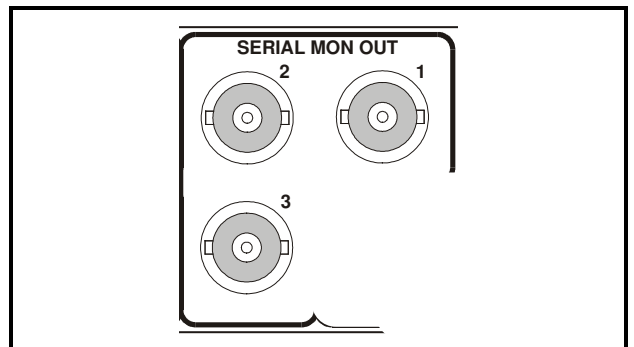
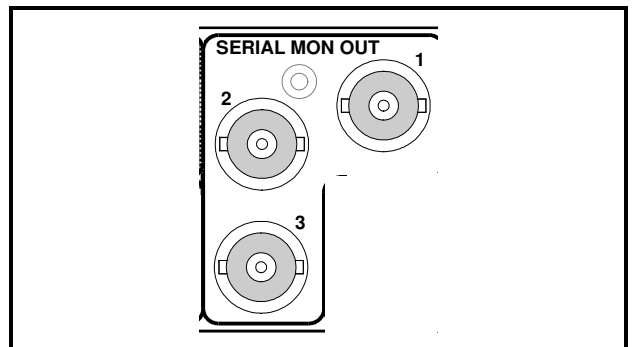
If the card is not operating (e.g. not powered) or is not fitted in the enclosure the input signal will be connected to output 3 via a relay contact. Note that if the card is un-powered or withdrawn from the enclosure while processing a signal the output signal will suffer a short disturbance.

OUTPUT CONNECTIONS

Serial Mon Out

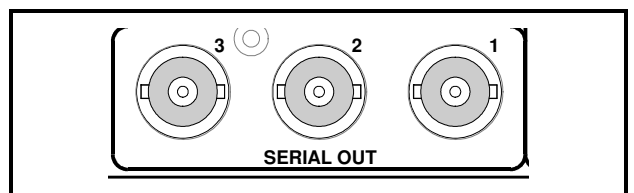
Three isolated monitoring outputs are available from these BNC connectors.

Note that these outputs may be used as additional main outputs. They may be configured as processed or unprocessed outputs.



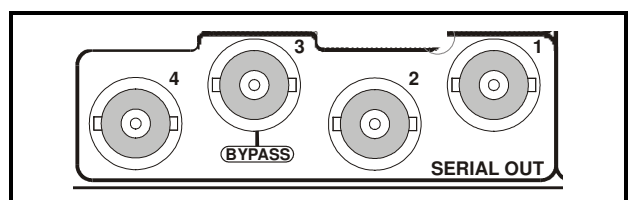
Serial Digital Video Output

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



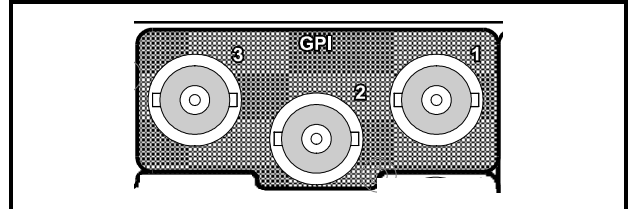
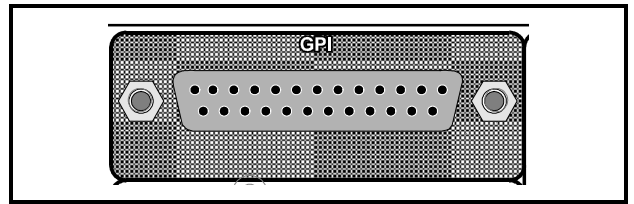
Modules fitted with the Bypass Facility

The bypass output connector (output 3) must be terminated in 75 Ohms at all times. If this output is not used a BNC 75 Ohm terminator should be fitted. If these precautions are not taken the input signal will become unterminated if the card is un-powered or withdrawn from the enclosure.



GPI

The General Purpose Interfaces (GPI's) are accessed via a 25 way D type female connector or the three BNC connectors. In the table GPI refers to inputs and GPO refers to outputs.



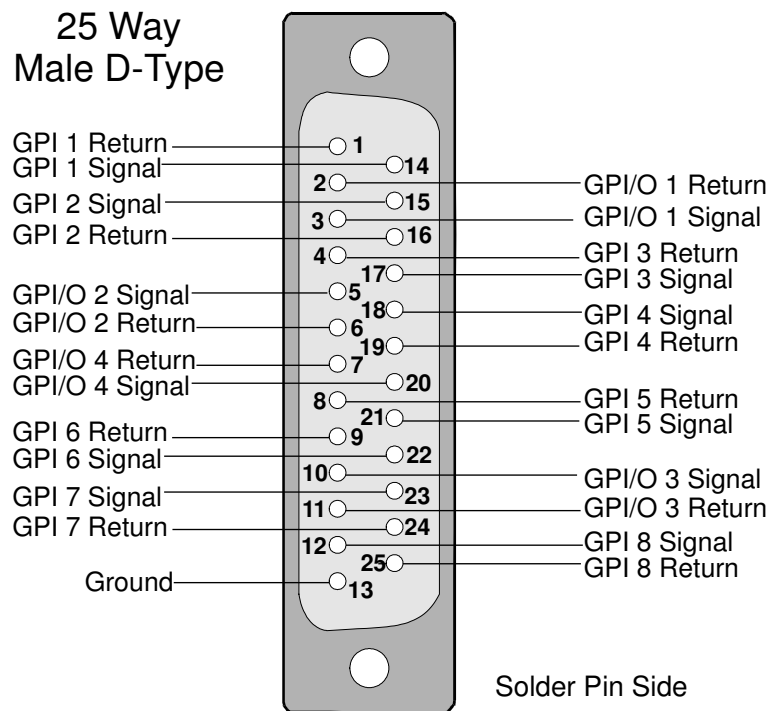
25 way Pin Connections

PIN	NAME	DESCRIPTION
1	GPI 1 RET	Return GPI 1
14	GPI 1	Signal GPI 1
16	GPI 2 RET	Return GPI 2
15	GPI 2	Signal GPI 2
4	GPI 3 RET	Return GPI 3
17	GPI 3	Signal GPI 3
19	GPI 4 RET	Return GPI 4
18	GPI 4	Signal GPI 4
8	GPI 5 RET	Return GPI 5
21	GPI 5	Signal GPI 5
9	GPI 6 RET	Return GPI 6
22	GPI 6	Signal GPI 6
24	GPI 7 RET	Return GPI 7
23	GPI 7	Signal GPI 7
25	GPI 8 RET	Return GPI 8
12	GPI 8	Signal GPI 8
2	GPI/O 1 RET	Return GPI/O 1 (BNC 1)
3	GPI/O 1	Signal GPI/O 1 (BNC 1)
6	GPI/O 2 RET	Return GPI/O 2 (BNC 2)
5	GPI/O 2	Signal GPI/O 2 (BNC 2)
11	GPI/O 3 RET	Return GPI/O 3 (BNC 3)
10	GPI/O 3	Signal GPI/O 3 (BNC 3)
7	GPI/O 4 RET	Return GPI/O 4
20	GPI/O 4	Signal GPI/O 4
13	Ground	GND

25 way Pin Connections

PIN	NAME	DESCRIPTION
1	GPI 1 RET	Return GPI 1
14	GPI 1	Signal GPI 1
2	GPI/O 1 RET	Return GPI/O 1 (BNC 1)
15	GPI 2	Signal GPI 2
3	GPI/O 1	Signal GPI/O 1 (BNC 1)
16	GPI 2 RET	Return GPI 2
4	GPI 3 RET	Return GPI 3
17	GPI 3	Signal GPI 3
5	GPI/O 2	Signal GPI/O 2 (BNC 2)
18	GPI 4	Signal GPI 4
6	GPI/O 2 RET	Return GPI/O 2 (BNC 2)
19	GPI 4 RET	Return GPI 4
7	GPI/O 4 RET	Return GPI/O 4
20	GPI/O 4	Signal GPI/O 4
8	GPI 5 RET	Return GPI 5
21	GPI 5	Signal GPI 5
9	GPI 6 RET	Return GPI 6
22	GPI 6	Signal GPI 6
10	GPI/O 3	Signal GPI/O 3 (BNC 3)
23	GPI 7	Signal GPI 7
11	GPI/O 3 RET	Return GPI/O 3 (BNC 3)
24	GPI 7 RET	Return GPI 7
12	GPI 8	Signal GPI 8
25	GPI 8 RET	Return GPI 8
13	Ground	GND

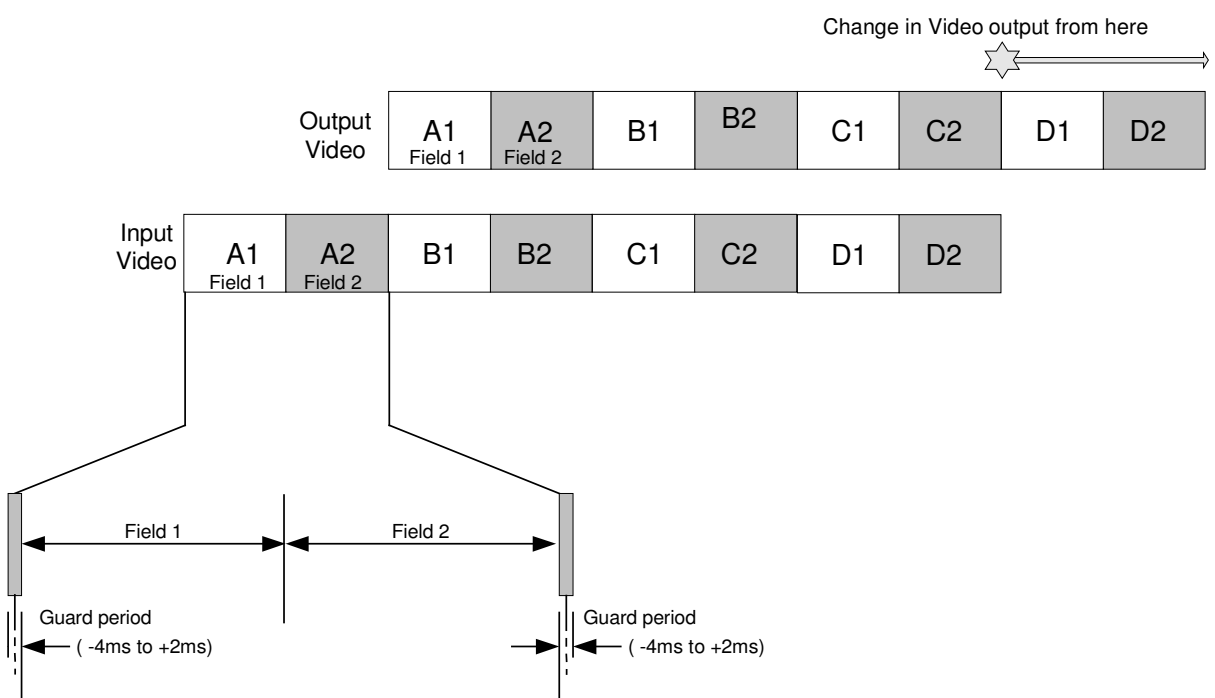
25 way Pin Connections



GPI Timing

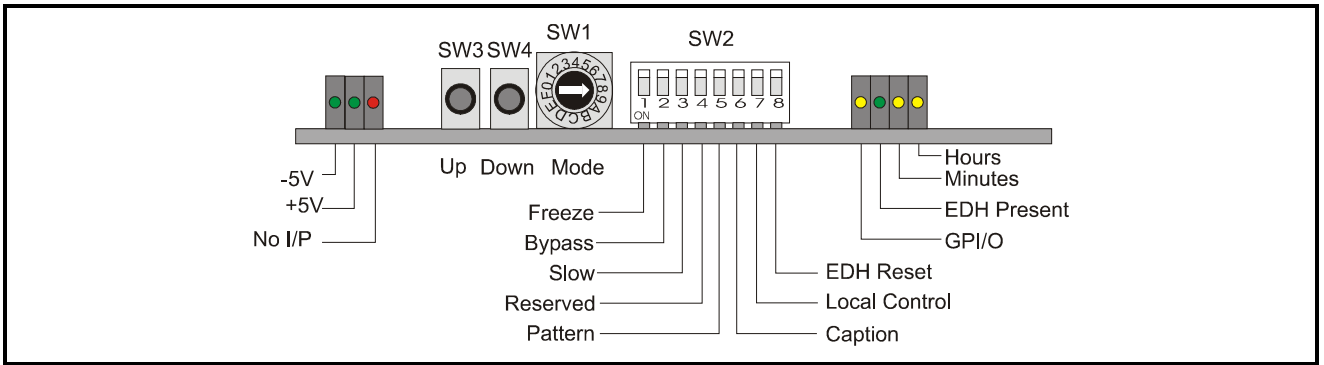
The GPI inputs are sampled at frame rate, on a frame boundary (field2 to field1 transition), with a guard period of 4ms before and 2ms after the sampling point. The GPI input signal has to remain a steady state during the guard period to ensure a GPI is triggered and registered correctly. Any GPI changes of state during the guard period will produce an undetermined result. The function that is linked to respond to a GPI input will appear on the output after two frames of delay. The following diagram shows a GPI signal being accepted at the A2 / B1 frame boundary, which in turn causes the change in video output within the C2 / D1 frame.

NOTE: This timing applies to memory recalls. Caption and Freeze are handled on the next output Frame.



The guard period between repeated memory recalls using GPI inputs is 12 frames.

CARD EDGE CONTROLS

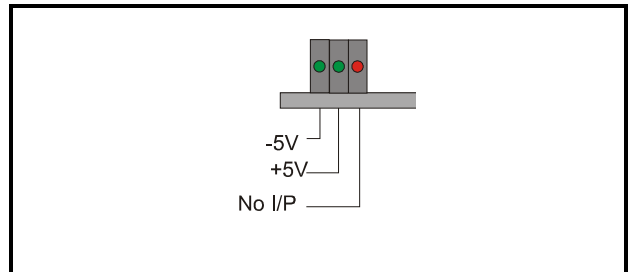


The unit will respond to both local and remote control, one system overriding the settings of the other. For cards using the RollCall™ remote control system, activating these switches will override the remote control settings. The RollCall™ control panel will then follow these settings.

LED INDICATORS

+5V and -5V

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

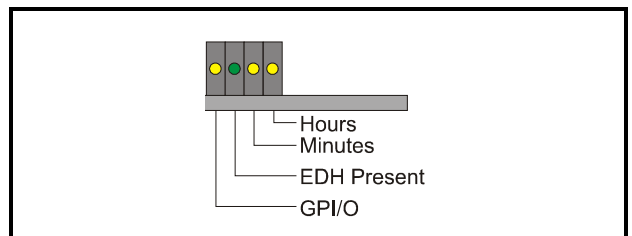


No I/P

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

GPI/O

The function of this LED is reserved for future use.



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 **Minutes** LED indicates that an error has occurred in the last minute.

Note that SW2/8 resets these indicators.

Adjustment of the settings of the IQARC01 is available either via card edge controls and/or via a more comprehensive remote control system using RollCall™

SWITCHES

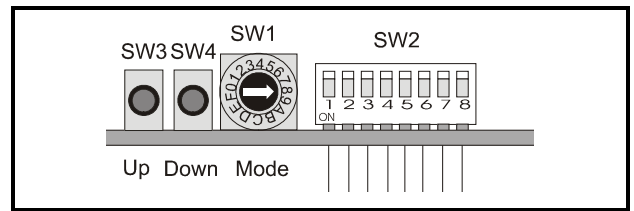
Two push buttons, a Hex switch and an 8 way DIL switch allow various functions and modes to be set.

The DIL switch SW2 selects a particular function and the Hex switch SW1 selects a mode or variable parameter.

The push buttons SW3, SW4 allow the value of the selected function/parameter to be adjusted.

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

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



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

More detailed information about these functions will be found under *MENU DETAILS* starting on page30.

FUNCTION AND MODE SELECTIONS

DIL SWITCH FUNCTIONS SW2

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

Position 1

This allows the freeze mode to be selected.

Position 2

Setting to ON selects the **Bypass** mode.

When enabled the input signal will pass through the electronics of the unit with everything at default settings.

Position 3

When the output picture size changes this function allows control over the way that the change of picture size occurs.

When selected the picture size will change smoothly to the new size when the IQARC01 is in manual mode.

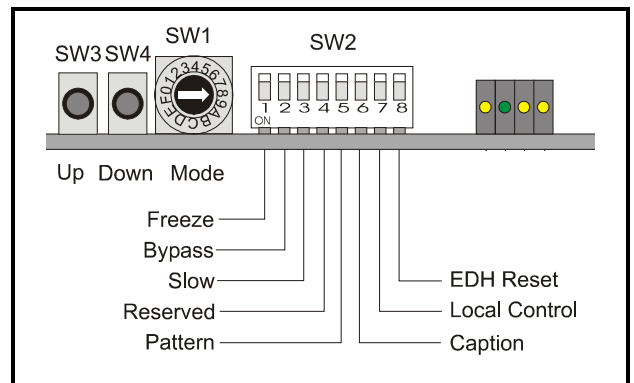
Position 4 This position is reserved

Position 5

Setting this to ON, the selected Test Pattern is switched to the output.

Note that if the caption is ON the pattern will be black.

The pattern selection is made using the hex switch SW1.



Position 6

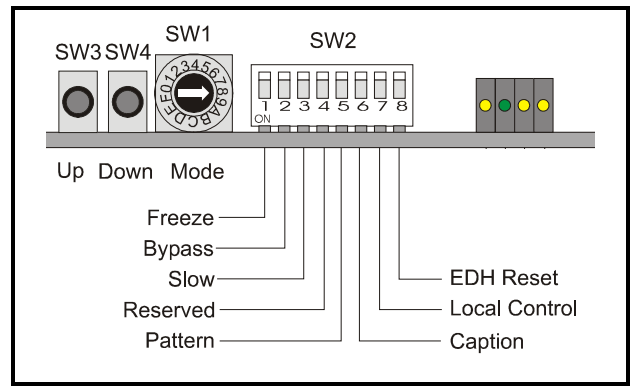
Setting this to ON, the 10 line display is switched to the output.

Position 7

This position is reserved for future use.

Position 8

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



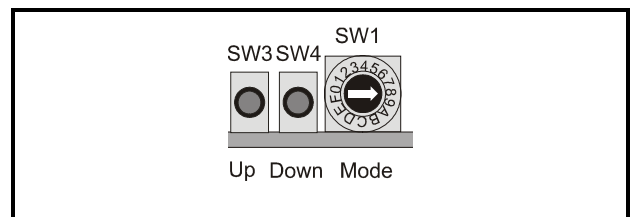
SW1

This HEX switch selects a parameter that may be adjusted with the push-buttons SW3 and SW4. *Note that SW4 decreases a setting and SW3 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 Aspect Ratio

This allows a fixed aspect ratio to be selected from the following list and in this order.

- Pass (Output the same as input aspect ratio)
- 12F12->12P16 4:3 > 16:9 PB
- 12F12->14P16 4:3 > 14:9 PB
- 12F12->16F16 4:3 > 16:9 FH
- 16L12->12F12 16:9 LB > 4:3
- 16L12->14L12 16:9 LB > 14:9 LB
- 16F16->12F12 16:9 FH > 4:3
- 16F16->14L12 16:9 FH > 14:9 LB
- 16F16->16L12 16:9 FH > 4:3 LB



SW1 (cont)

Position 1 Pan

This selects the Pan function. This will adjust the horizontal position of the output image.

The range of adjustment is ± 3700 in steps of 1.

Position 2 Tilt

This selects the Tilt function. This will adjust the vertical position of the output image.

The range of adjustment is ± 3000 in steps of 1.

Position 3 Size

This selects the Size function. This will adjust the size of the whole image.

The range of adjustment is from 0.5 to 2.0 in steps of 0.001.

Position 4 Aspect

This selects the Aspect function. The output aspect ratio may be adjusted using this control.

The range of adjustment is from 0.5 to 2.0 in steps of 0.001.

Position 5 Output Routing

This selects the Output Routing function that allows what type of signal that appears at the three Monitoring outputs. Selections are either Processed path or Unprocessed path.

Position 6 Default Standard

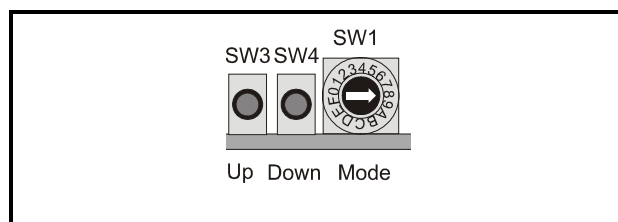
This selects the Default Output function. If the input signal fails the main SDI outputs may be configured to become either Freeze (a frozen picture) or Black.

Positions 8 and 9 are not used.

Position A Pattern Select

When SW2/5 is selected the pattern that becomes the output can be chosen from this list.

Black
EBU Colour bars
100% Colour bars
Ramp
Multiburst
Pulse & bar
Green



Position B Border Colour

This function selects the Border Colour (the unused area outside the picture) to be selected.

Selections are:

Black
Blue
Red
Green
White
Grey
User A
User B

Position C Luma Gain

This function allows the Luma Gain to be adjusted by ± 6 dB in steps of 0.1 dB.

Position D Chroma Gain

This function allows the Chroma Gain to be adjusted by ± 6 dB in steps of 0.1 dB.

Position E Black Level

This function allows the Black Level to be adjusted by ± 100 mV in steps of 0.8 mV.

Position F Preset Unit

In this position, pressing SW1 and SW2 together sets all parameters to the default/pre-set conditions.

RollCall PC Control Panel Screens

ARC

This screen allows settings to be made for the aspect ratio conversion parameters.

Bypass

When checked this function allows the input signal to be passed through to the output without any processing.

Freeze

When selected the output will become a frozen frame.

Mode

This function allows the overall operating mode of the IQARC01 to be selected.

Manual

When checked the picture size will respond to the parameters set by the manual controls.

Minimum delay

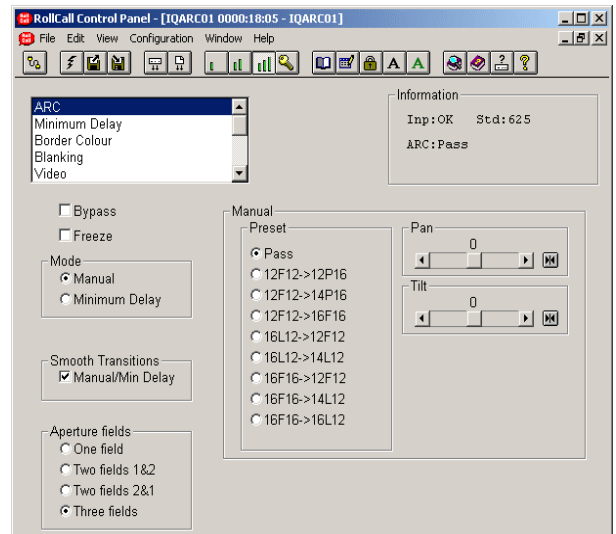
When checked the picture size will respond to the parameters set by the Minimum Delay control settings.

Smooth Transitions


When the output picture size changes this function allows control over the way that the change of picture size occurs.



Manual/Min Delay


When checked the picture size will change smoothly to the new size when the IQARC01 is in manual mode.



Note that for this and other screens the following applies:

The  symbol represents the Preset function and will return the function to the default setting.

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

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

Aperture Fields

This function allows the fields used for interpolation to be chosen.

One Field

The two and three field apertures will produce better results than the one field aperture. However in some special cases (e.g. programme material containing DVE moves or scrolling captions) a one field aperture may be preferred.

Two Fields 1&2

This aperture pairs fields 1 and 2 together as a set and applies a two field aperture to them.

Two Fields 2&1

As Two Fields 1&2 above but pairs the set across the other field boundaries. i.e. field 2 of one frame and field 1 of the next.

Three Fields (default)

This applies the best quality three field aperture to aspect ratio conversions.

ARC (continued)

Manual

This function allows the input-to-output aspect ratio conversion to be set.

Preset

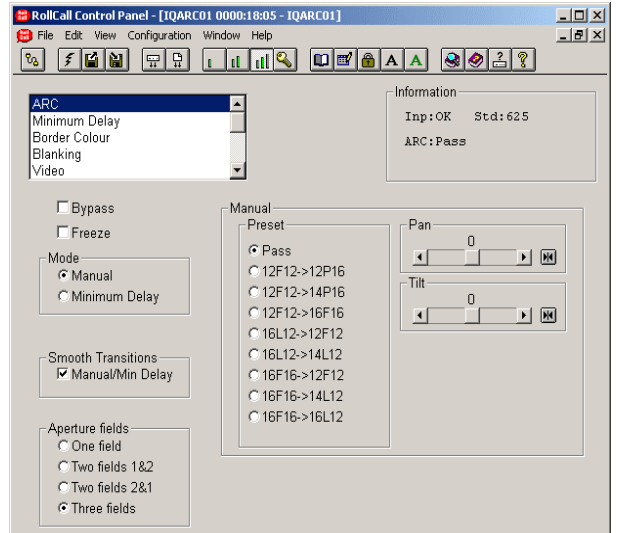
Preset values of aspect conversion may be chosen from the list:

Pass (Output the same as input aspect ratio)

- 12F12->12P16 4:3 > 16:9 PB
- 12F12->14P16 4:3 > 14:9 PB
- 12F12->16F16 4:3 > 16:9 FH
- 16L12->12F12 16:9 LB > 4:3
- 16L12->14L12 16:9 LB > 14:9 LB
- 16F16->12F12 16:9 FH > 4:3
- 16F16->14L12 16:9 FH > 14:9 LB
- 16F16->16L12 16:9 FH > 16:9 LB

Other values of aspect ratio conversion may be set up using the following controls:

*Note that when a **Preset** aspect ratio is selected the numerical values for that aspect ratio will be shown by the Aspect, Size, Pan and Tilt controls. These controls will then allow adjustments to be made to the selected **Preset** value.
Note that when any of these settings are changed the Preset value will be deselected.*



Pan and Tilt**Original Picture****Pan**

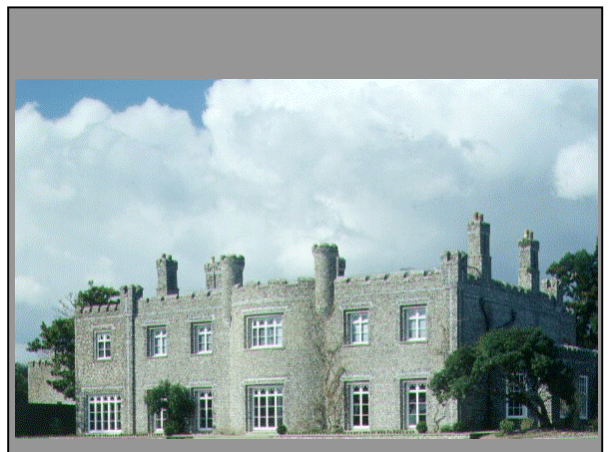
This will adjust the horizontal position of the output image.

The range of adjustment is ± 3700 in steps of 1.

**Effect of a pan****Tilt**

This will adjust the vertical position of the output image.

The range of adjustment is ± 3000 in steps of 1.

**Effect of Tilt**

Minimum Delay

This mode produces the minimum input/output delay by disabling vertical size changes; therefore only a reduced selection of preset aspect ration conversions are available.

When **Minimum Delay** mode is selected the aspect ratio conversion may be set by the following items:

Minimum Delay

Preset

Preset values of aspect conversion may be chosen from the list:

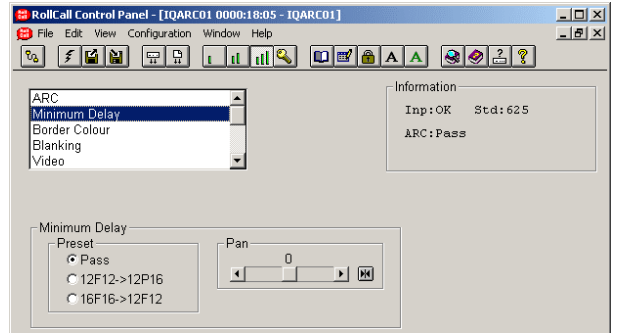
- Pass (Output the same as input aspect ratio)
- 12F12->12P16 4:3 > 16:9 PB
- 16F16->12F12 16:9 FH > 4:3

Default setting is to Pass

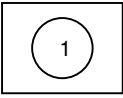
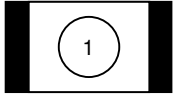
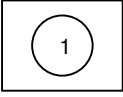
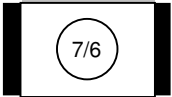
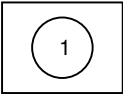
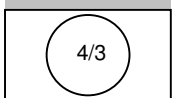
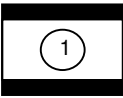
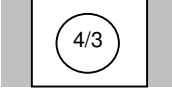
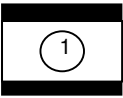
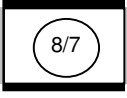
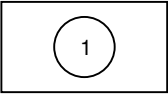
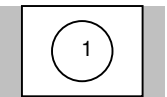
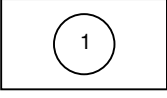
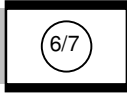
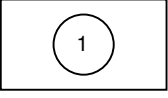
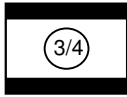
Pan

This will adjust the horizontal position of the output image.

The range of adjustment is ±3700 in steps of 1.



CONVERSION DETAILS

Input		Transformation	Output	
4:3	16:9		4:3	16:9
		Description: 4:3 to 16:9 PB Menu: 12F12 to 12P16 Ratios: V: 1 H: 3/4		
		Description: 4:3 to 14:9 PB Menu: 12F12 to 14P16 Ratios: V: 7/6 H: 7/8	Active image is vertically cropped	
		Description: 4:3 to 16:9 FH Menu: 12F12 to 16F16 Ratios: V: 4/3 H: 1		
		Description: 16:9 LB to 4:3 Menu: 16L12 to 12F12 Ratios: V: 4/3 H: 4/3		Active image is side cropped
		Description: 16:9 LB to 14:9 LB Menu: 16L12 to 14L12 Ratios: V: 8/7 H: 8/7		Active image is side cropped
		Description: 16:9 FH to 4:3 Menu: 16F16 to 12F12 Ratios: V: 1 H: 4/3		Active image is side cropped
		Description: 16:9 FH to 14:9 LB Menu: 16F16 to 14L12 Ratios: V: 6/7 H: 8/7		Active image is side cropped
		Description: 16:9 FH to 4:3 LB Menu: 16F16 to 16L12 Ratios: V: 3/4 H: 1		

Border Colour

This function allows the Border Colour (the unused area outside the picture) to be selected.

Colour

Specific colours may be selected or two custom set-ups are available from the User A and User B items.

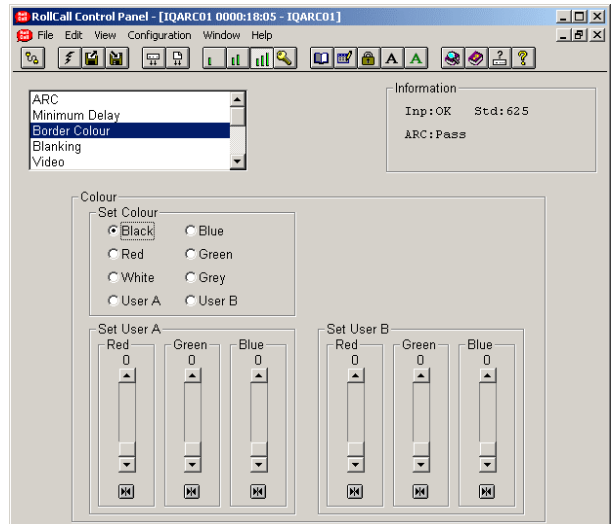
Set Colour selections are:

- | | |
|--------|--------|
| Black | Blue |
| Red | Green |
| White | Grey |
| User A | User B |

Set User A, Set User B

This function allows custom settings of red, green and blue to be adjusted using the scroll bars.

The range of control is from 0 to 255 units in steps of 1 unit.
Preset is to 0.



Blanking

This function allows the left/right horizontal and the top/bottom blanking edges to be moved in both the input and output active picture.

Input and Output

Left/Right

The Left/Right edge may be moved from 0 to 13.246 μ s of the picture width in steps of 148 ns.

Top/Bottom

The Top/Bottom edge may be moved from 0 to 200 lines of the picture height in steps of 1 line.

Std525 Line 21/283 (525 line systems only)

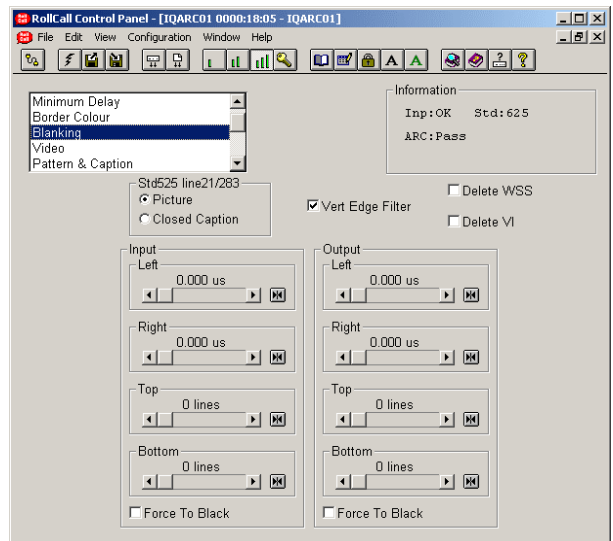
This allows the selection of line 21/283 as a video line or a VITS line (usually closed captioning).

Picture

Selects line 21/283 as a video line.

Closed Caption

Selects line 21/283 as a vertical blanking line.
Note: When this option is selected the control of 'Input Blanking Top' should be manually set to be at least two lines to prevent closed caption appearing in the active picture.



Vert Edge Filter

When selected a one line cross fade action is introduced on the horizontal edge transition between picture and blanking which helps to remove twitter.

Force to Black (Input & Output)

Selecting this function will force the input (output) blanking to black therefore allowing the input (output) blanking to be black and the other to be a colour.

Video

Proc Amp

This selection allows various adjustments to be made to the processed signal.

Luma Gain

This selection reveals a numerical readout display for the gain of the luminance signal.

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

Selecting Preset returns the setting to the calibrated value of 0.

Black Level

This selection reveals a numerical readout display for the Y pedestal or black level.

By using the scroll bar the pedestal may be adjusted by ± 100 mV in steps of 0.8 mV.

Selecting Preset returns the setting to the calibrated value of 0.

Chroma Gain

This selection reveals a numerical readout display for the gain of the chrominance signal.

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

Limiting

These functions allow Y and C signal excursions to be limited by setting minimum and maximum clipping levels. All adjustments are made in steps of 0.8 mV.

Y Clipper Min

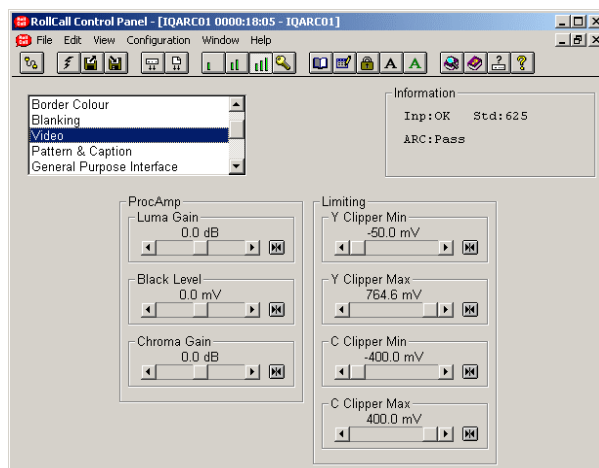
The minimum clip level for the luminance signal may be set between -50 mV and $+49.2$ mV

Preset value is -50 mV

Y Clipper Max

The maximum clip level for the luminance signal may be set between $+635$ mV and $+764.6$ mV

Preset value is $+764.6$ mV



C Clipper Min

The minimum clip level for the chrominance signal may be set between -400 mV and -200 mV

Preset value is -400 mV

C Clipper Max

The maximum clip level for the chrominance signal may be set between $+200$ mV and $+400$ mV

Preset value is $+400$ mV

Pattern & Caption

This item allows a pattern to be selected as the output, a caption to be setup and a character display of 10 lines to be displayed.

Note that the picture behind the caption will appear at half amplitude luminance.

Caption

Edit Caption

A 1 line caption of 19 characters may be set up by editing the text string.

Preset is IQARC01.

Select Caption

The caption may be selected as

- Caption Off The caption will not appear
- Caption On The caption will appear

Insertion

This item allows the pattern, caption and display to be inserted into either the Processed path or the Unprocessed path or both.

Pattern

This function will allow various patterns to be used as the output signal.

Pattern On

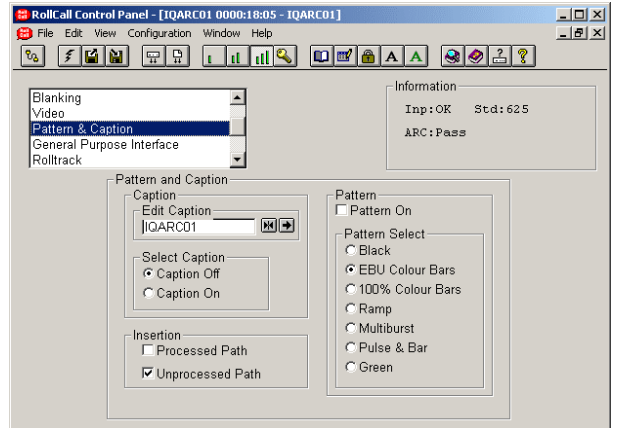
When this item is selected a pattern from the list, will become the output signal.

Note: if patterns and caption are turned on at the same time then the pattern will default to black.

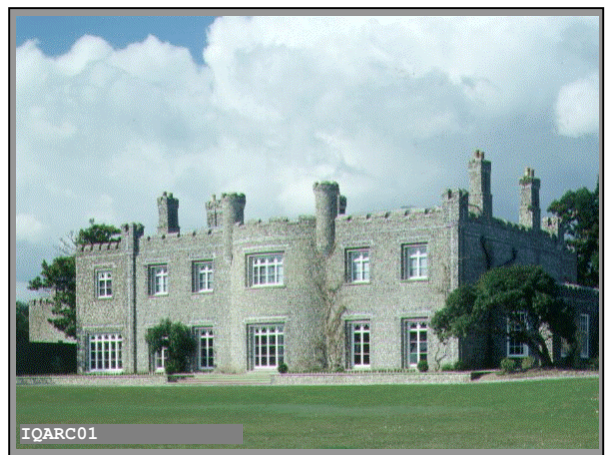
Pattern Select

The pattern may selected from the following list:

- Black
- EBU Colour Bars
- 100% Colour bars
- Ramp
- Multiburst
- Pulse & bar
- Green



Example of On Screen Display



General Purpose Interface

When fitted with a 25 way D connector the IQARC01 has eight GPI inputs and four others that may be configured as inputs or outputs.

When fitted with BNC connectors the IQARC01 has three GPI inputs that may be configured as inputs or outputs.

GPI In

By using the scroll bar one of the GPI's may be selected from the following:

GPI 1 to 8 and GPIO IN 1 to 4

Input Functions

When the GPI input is activated the IQARC01 may be configured to respond in one of the following ways:

Unused	The function not active. This is also the Preset Setting.
Pattern ON	The unit will produce a pattern output. Note that the caption function must be switched OFF.
Freeze	The unit will enter the freeze mode.
Memory 1 to 16	The unit will use the settings stored in the selected memory location.
Memory 1-2	The unit will toggle between the settings of memory locations 1 and 2. Open to Closed = Memory 1 settings Closed to Open = Memory 2 settings

Disable Inputs

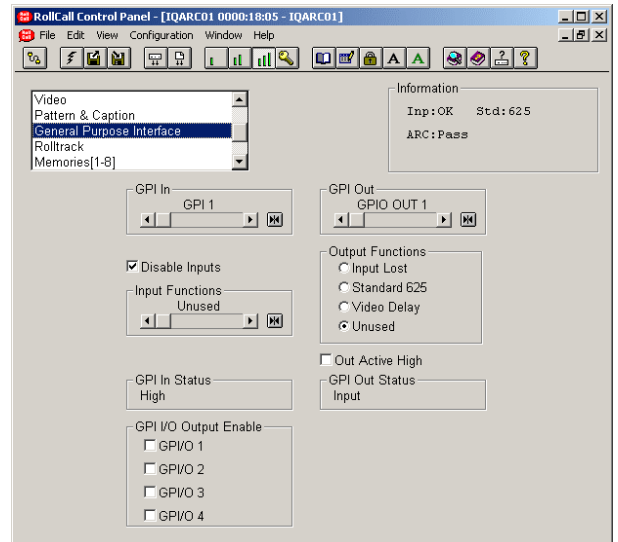
When selected all GPI input functions will be disabled.

GPI In Status

This will show the current status of the GPI input.

GPI Out Status

This will show the current status of the GPI output.



GPI out

By using the scroll bar one of the four configurable GPI's may be selected from the following:

GPIO OUT 1 to 4

When a GPI is configured as an output it can provide an output corresponding to one of the following conditions:

Output Functions

The GPO may be configured to produce an output corresponding to one of the following conditions:

Unused	The function is not active (Preset setting)
Input Lost	Produces an output if the input signal is lost
Standard 625	Produces an output if the operating line standard is 625
Video delay	Produces a high output signal corresponding to the video delay through the unit

GPI I/O Output Enable

Normally GPI 1, 2, 3, and 4 are configured as inputs. By checking a box the associated GPI will be configured as an output.

RollTrack

This function allows information to be sent, via the RollCall™ network, to other compatible units connected on the same network.

For example, it can enable 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. This allows processed video signals to be timed correctly with audio signals. This automatic tracking system via the RollCall™ network is called **RollTrack**.

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

RollTrack Index

This item allows up to 16 destinations to be selected.

RollTrack Source


This allows the source of information that triggers the transmission of data to be selected. Options are:

- Unused (off) Preset
- Video Delay
- Input Present
- Input Missing
- Standard 525
- Standard 625

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

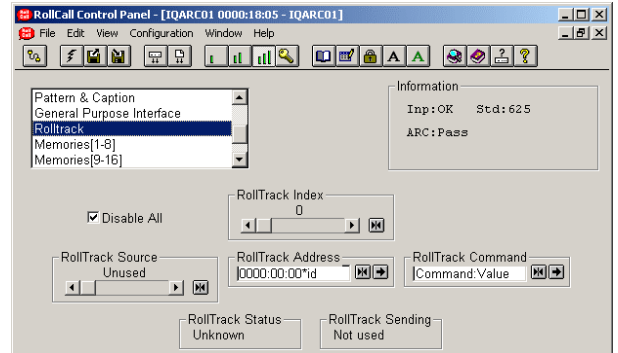
RollTrack Address

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

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



(Preset) returns to the default destination



The full RollTrack address has four sets of numbers.

For example: 0000:10:01*99

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 (99) is a user settable ID number to help identify the sender in a multi-unit system

RollTrack Command

The full **Rolltrack** command has two sets of numbers.

For example: 84*156

The first set (84) is the **Rolltrack** command number

Note that only command numbers 14,15,16 and 17 should be used for audio delay

The second set (156) is the value sent with the **Rolltrack** command number

Note that when video delay is selected as the Rolltrack source the value sent with the Rolltrack command is the video delay value not the value set

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

RollTrack (continued)**RollTrack Sending**

This item shows when the unit is actively sending the RollTrack command.

This may show:

- | | |
|--------|--------------------------------------|
| String | A string value is always being sent. |
| Number | A number value is always being sent. |
| No | The message is not being sent. |
| Yes | The message is being sent. |

Internal Type Error

Inconsistent behavior; please contact your local Snell & Wilcox agent.

Disable All

When this item is checked all RollTrack items will be disabled.

RollTrack Status

This item will show the status of the RollTrack system.

RollTrack Sending

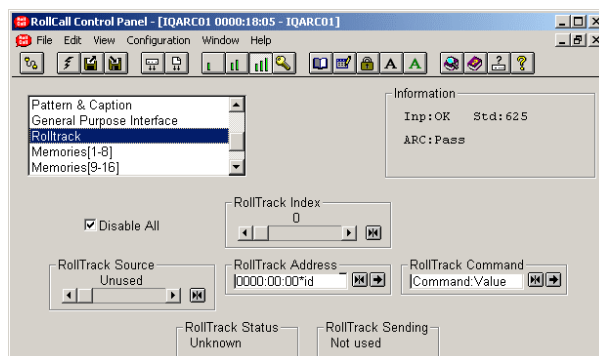
This item shows when the unit is actively sending the RollTrack command.

This may show:

- | | |
|--------|--------------------------------------|
| String | A string value is always being sent. |
| Number | A number value is always being sent. |
| No | The message is not being sent. |
| Yes | The message is being sent. |

Internal Type Error


Inconsistent behavior; please contact your local Snell & Wilcox agent.





Memories


User Memories (1 to 8) and (9 to 16)


This function allows a number of particular setups of the IQARC01 to be saved and recalled. There are 16 memory locations available.

To change the name of a memory location type the new name in the text area and then select  (return)

 (Preset) returns the name to the default name.

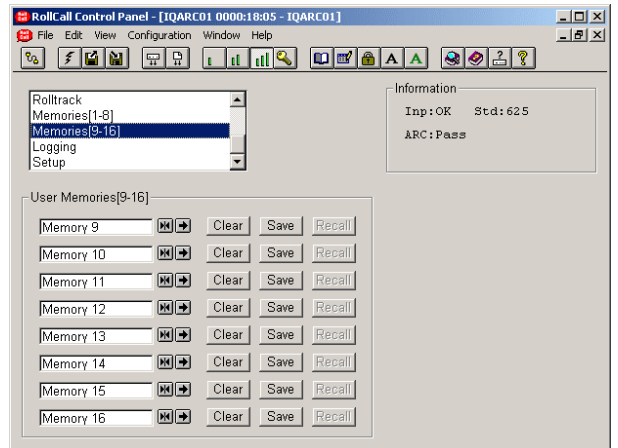
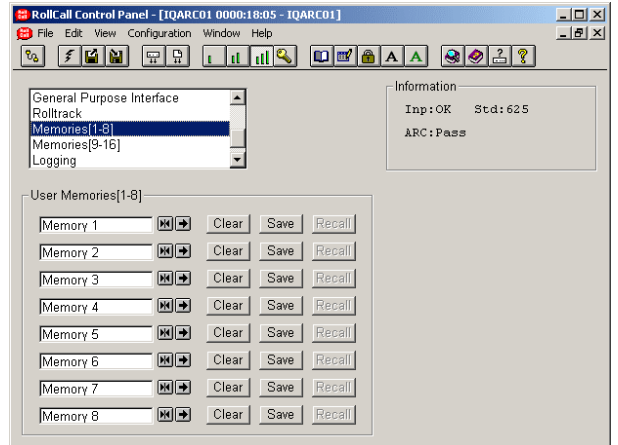
 This item allows the memory location to be cleared and returned to the default (preset) setting.

 This function allows the settings of all items to be saved at the memory location.

 This function allows the saved settings (as selected by the **Memory Index** function) to be recalled.

Memory Index

When a setup is saved at a particular memory location all parameters are saved.

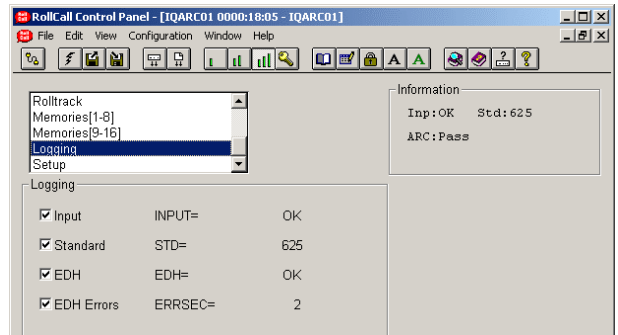


Logging

Logging

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

Any of the items may be selected from the list.



Setup

This item allows various basic functions to be set up.

Input Standard

525 If only this item is selected the unit will be forced to only accept a 525 line standard

625 If only this item is selected the unit will be forced to only accept a 625 line standard

If both 525 and 625 are selected the unit will automatically operate at the incoming line standard.

If neither of the items are selected the unit will remain in the state of the last selection.

Terminology

The notation used to express the aspect ratio may be chosen with this item.

WRT9 Aspect ratio of active image area expressed as a two digit abbreviated numeric value where the comparison ratio is against a height of 9.
e.g. 12 is used for 4 by 3 (12 by 9).

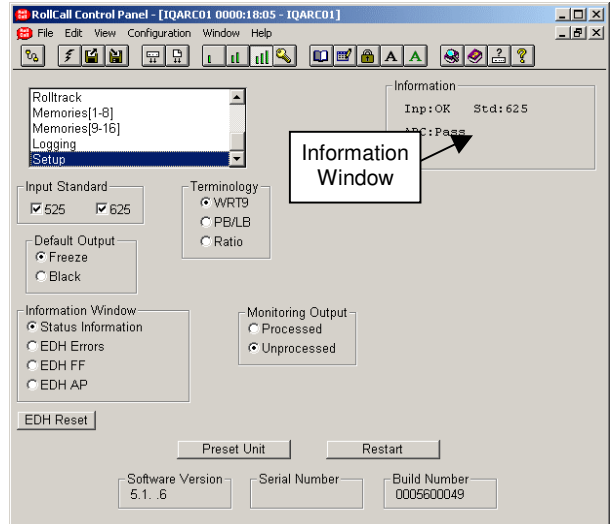
PB/LB The visual effect of the image and display raster aspect ratios combined.
PB (Pillar Box) is full height but with black down the sides. LB (Letter Box) is full width with black top and bottom.

Ratio The aspect ratio expressed as a numerical ratio of width to height.

Default output

If the input signal fails the output may be configured to become either Black or Freeze (a frozen picture)

Note that the default output for the unprocessed path will always be to black.



Information Window

This item allows the type of data shown in the information window, to be selected.

Options are:

- Status Information Shows the status of the unit
e.g. FRZ BYP MIN PAT
Where FRZ = Picture freeze
BYP= Unit in Bypass
MIN = Unit in Min Delay mode
PAT = Pattern On
- EDH Errors Shows EDH Error seconds
- EDH FF Shows Full Field checksum
Note that field 2 checksum is shown on the left and field 1 on the right of the display.
- EDH AP Shows Active Picture Checksum
Note that field 2 checksum is shown on the left and field 1 on the right of the display.

Setup (cont)**Monitoring Output**

This function allows what type of signal that will appear at the three Monitoring outputs.

Processed The signal via a fully processed path with procamp, Signaling etc. enabled.

Unprocessed The unprocessed path is the input signal with optional OSD, pattern and signaling.

EDH Reset

This will reset the EDH error counter to zero.

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.

Restart

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

Software Version

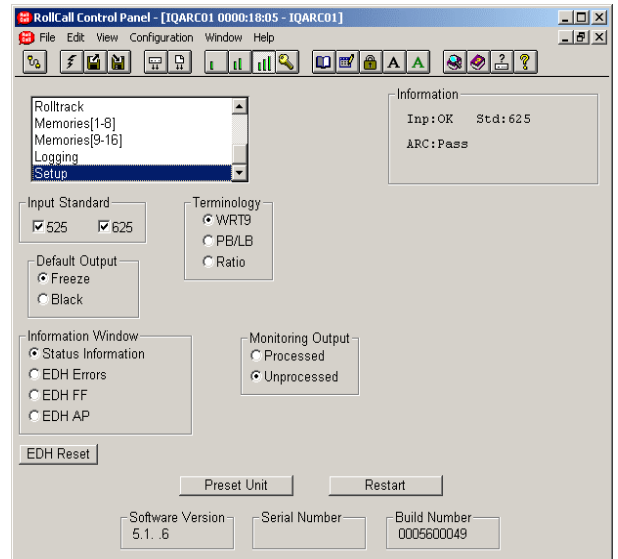
This item shows the version of the software fitted in the module.

Serial Number

This item shows the serial number of the module

Build Number

This item shows the build number of the module



Operation from an Active Control Panel

The card may be operated from an active control panel via the RollCall™ network.



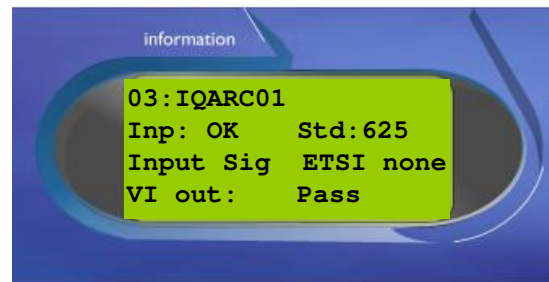
All operational parameters and selections are made using a system of menus displayed in two LCD windows.

Operational details for the remote control panel can be found in the Modular System Operator's Manual.

Information Window

The Information window has four lines of text indicating the current state of the unit.

For details of the abbreviations used please see page 27.

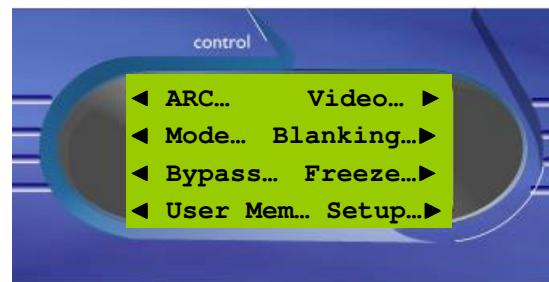


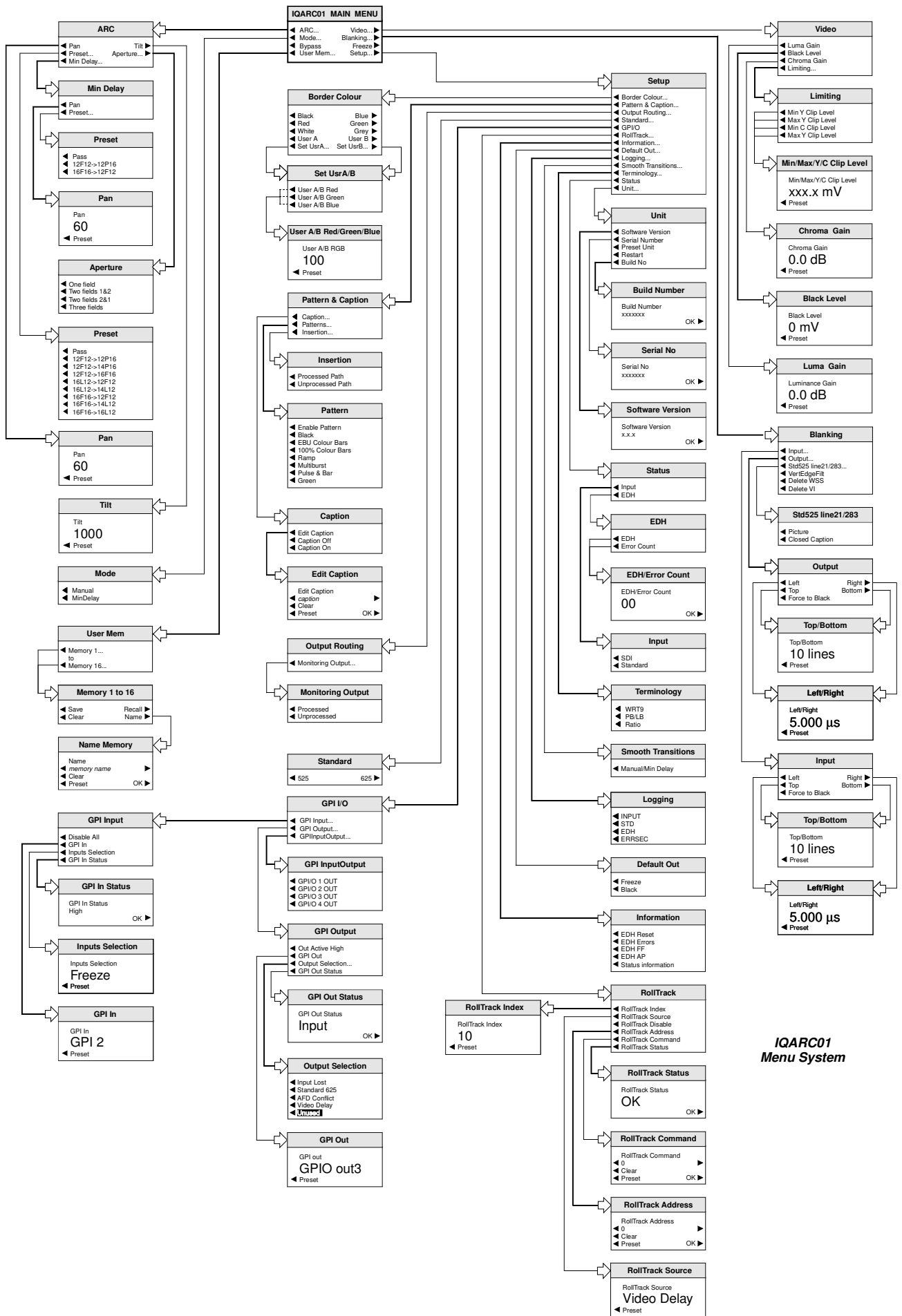
Control Window

The Control window displays all Selection Menus and sub-menus.

The selection is made by pressing the button adjacent to the required item.

The menu structure is detailed in the following pages.





IQARC01 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 on the previous page and will appear in the Control display window.

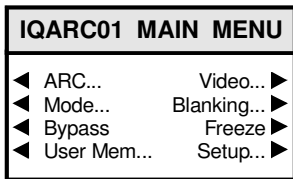
(See IQARC01 Menu System drawing on previous page)

The system may be considered structured as a set of menus and sub-menus that are displayed in the LCD window.

A new menu is selected by pressing the appropriate dedicated function button.

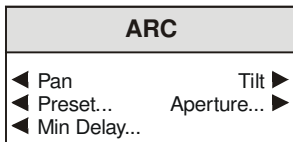
If necessary a sub-menu may be then be selected by pressing the push button adjacent to the arrowhead in the text line of the menu name.

This sub-menu will then be displayed in the window and will have the option of selecting another sub-menu in the same manner, or allow the adjustment of a particular parameter. Parameters enabled will appear as highlighted reverse text (white text on a black background)



ARC

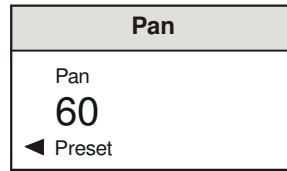
This screen allows settings to be made for the aspect ratio conversion parameters.



Original Picture

◀ Pan

This adjusts the horizontal position of the output image.



Effect of a Pan

The range of adjustment is ±3700 in steps of 1.

Tilt ▶

This adjusts the vertical position of the output image.



Effect of a Tilt

The range of adjustment is ±3000 in steps of 1.

◀ Preset

Preset
◀ Pass
◀ 12F12->12P16
◀ 12F12->14P16
◀ 12F12->16F16
◀ 16L12->12F12
◀ 16L12->14L12
◀ 16F16->12F12
◀ 16F16->14L12
◀ 16F16->16L12

Preset values of aspect conversion may be chosen from the list:

- Pass (Output the same as input aspect ratio)
 12F12->12P16 4:3 > 16:9 PB
 12F12->14P16 4:3 > 14:9 PB
 12F12->16F16 4:3 > 16:9 FH
 16L12->12F12 16:9 LB > 4:3
 16L12->14L12 16:9 LB > 14:9 LB
 16F16->12F12 16:9 FH > 4:3
 16F16->14L12 16:9 FH > 14:9 LB
 16F16->16L12 16:9 FH > 16:9 LB

*The pan and tilt controls allow adjustments to be made to the selected **Preset** value.
 Note that when any of these settings are changed the Preset value will be deselected.*

◀ Min Delay

This mode produces the minimum input/output delay by disabling vertical size changes; therefore only a reduced selection of preset aspect ratio conversions are available.

When **Minimum Delay** mode is selected the aspect ratio conversion may be set by the following items:

Min Delay
◀ Pan
◀ Preset...

◀ Pan

This will adjust the horizontal position of the output image.

Pan
Pan
60
◀ Preset

The range of adjustment is ±3700 in steps of 1

◀ Preset

Preset
◀ Pass
◀ 12F12->12P16
◀ 16F16->12F12

Preset values of aspect conversion may be chosen from the list:

- Pass (Output the same as input aspect ratio)
 12F12->12P16 4:3 > 16:9 PB
 16F16->12F12 16:9 FH > 4:3

Default setting is to Pass

Aperture ▶

This function allows the fields used for interpolation to be chosen.

Aperture
◀ One field
◀ Two fields 1&2
◀ Two fields 2&1
◀ Three fields

◀ One Field

The two and three field apertures will produce better results than the one field aperture. However in some special cases (e.g. programme material containing DVE moves or scrolling captions) a one field aperture may be preferred.

◀ Two Fields 1&2

This aperture pairs fields 1 and 2 together as a set and applies a two field aperture to them.

◀ Two Fields 2&1

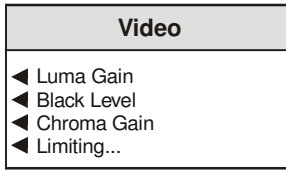
As Two Fields 1&2 above but pairs the set across the other field boundaries. i.e. field 2 of one frame and field 1 of the next.

◀ Three Fields (default)

This applies the best quality three field aperture to aspect ratio conversions.

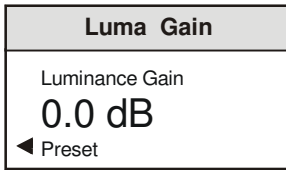
Video

This selection allows various adjustments to be made to the processed signal.



◀ Luma Gain

This selection reveals a numerical readout display for the gain of the luminance signal.

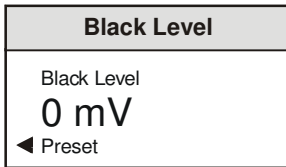


By using the scroll bar the gain may be adjusted by ±6 dB in steps of 0.1 dB.

Selecting Preset returns the setting to the calibrated value of 0.

◀ Black Level

This selection reveals a numerical readout display for the Y pedestal or black level.

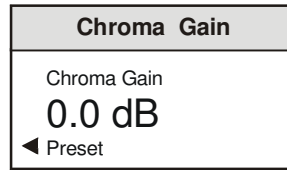


By using the scroll bar the pedestal may be adjusted by ±100 mV in steps of 0.8 mV.

Selecting Preset returns the setting to the calibrated value of 0.

◀ Chroma Gain

This selection reveals a numerical readout display for the gain of the chrominance signal.

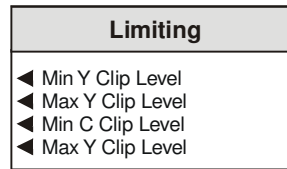


By using the scroll bar the gain may be adjusted by ±6 dB in steps of 0.1 dB.

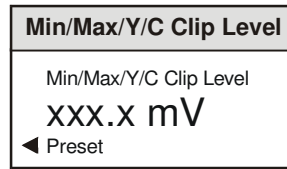
Selecting Preset returns the setting to the calibrated value of 0.

◀ Limiting

This function allows Y and C signal excursions to be limited by setting minimum and maximum clipping levels.



All adjustments are made in steps of 0.8 mV.



◀ Min Y Clip level

The minimum clip level for the luminance signal may be set between -50 mV and +49.2 mV

Preset value is -50 mV

◀ Max Y Clip level

The maximum clip level for the luminance signal may be set between +635 mV and +764.6 mV

Preset value is +764.6 mV

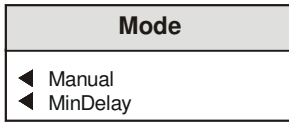
◀ Min C Clip level

The minimum clip level for the chrominance signal may be set between -400 mV and -200 mV

Preset value is -400 mV

Mode

This function allows the overall operating mode of the IQARC01 to be selected.



◀ Manual

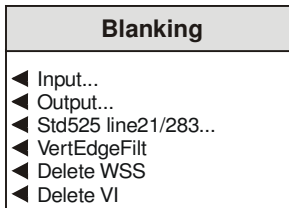
The picture size will respond to the parameters set by the manual controls.

◀ Minimum delay

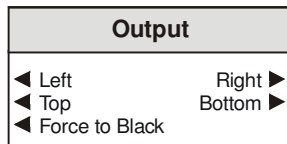
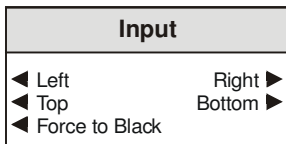
The picture size will respond to the parameters set by the Minimum Delay control settings.

Blanking

This function allows the left/right horizontal and the top/bottom blanking edges to be moved in both the input and output active picture.

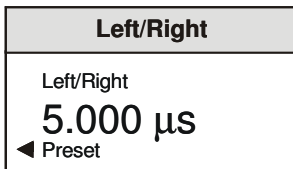


◀ Input and ▶ Output



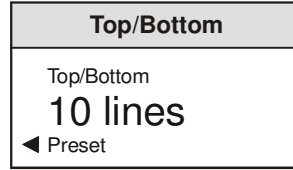
◀ Left/Right ▶

The Left/Right edge may be moved from 0 to 13.172 μ s in steps of 148 ns.

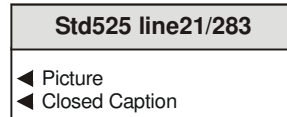


◀ Top/Bottom ▶

The Top/Bottom edge may be moved from 0 to 200 lines in steps of 1 line.



◀ Std525_Line 21/283 (525 line systems only)



This allows the selection of line 21/283 as a video line or closed captioning.

◀ Picture

Selects line 21/283 as a video line.

◀ Closed_Caption

Selects line 21/283 as a closed caption line.

Note: When this option is selected the control of 'Input Blanking Top' should be manually set to be at least two lines to prevent closed caption appearing in the active picture.

◀ VertEdgeFilt

When selected a one line cross fade action is introduced on the horizontal edge transition between picture and blanking which helps to remove twitter.

◀ Delete WSS

When selected this will delete the input WSS line (line 23 625 only). When not selected the WSS data will be regenerated with the same information as the input.

◀ Delete VI

When selected this will delete the input Video Index signal.

Bypass

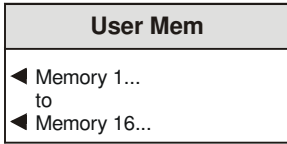
This function allows the input signal to be passed through to the output without any processing.

Freeze

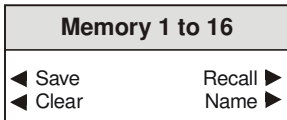
When selected the output will become a frozen field picture.

User Mem

This function allows a number of particular setups of the IQARC01 to be saved and recalled. There are 16 memory locations available.



Selecting a memory location will reveal the memory display that allows the current settings to be saved to or recalled from that memory location. The memory location may also be given a specific name.



◀ Save

This item will save the current settings in the memory location.

Recall ▶

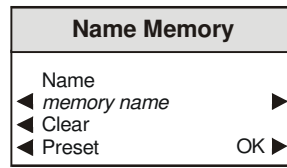
This item will recall the settings in the memory location.

◀ Clear

This item will return the contents of the memory location to the default (factory) values.

Name ▶

This selection allows renaming of the memory location.



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.

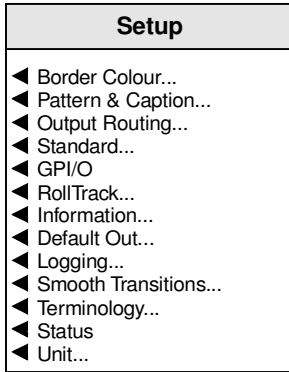
The ◀ **Clear** function blanks out the selected character.

The ◀ **Preset** function loads the default text, for example **Memory 1**.

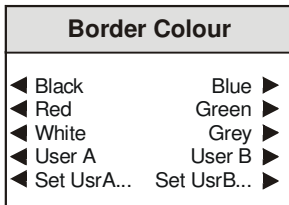
O.K. ▶ saves the caption text and returns to the main menu.

Setup

This item allows various functions to be set up.



◀ **Border Colour**



This allows the **Border Colour** (the blanked area outside the picture) to be selected.

Specific colours may be selected or two custom set-ups are available from User_A and User_B items.

Selections are:

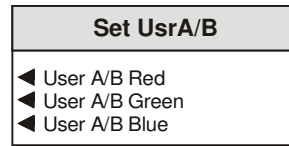
- Black
- Blue
- Red
- Green
- White
- Grey
- User_A
- User_B
- Set_Usr_A
- Set_Usr_B

◀ **User_A and User_B**

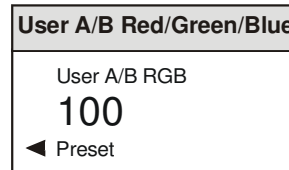
This selects either User_A or User_B setups.

◀ **Set_Usr_A and Set_Usr_B**

This function allows custom settings of red, green and blue to be adjusted.



This function allows custom settings of red, green and blue to be adjusted using the spin wheel.

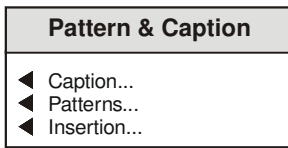


The range of control is from 0 to 255 units in steps of 1 unit.

Preset is to 0.

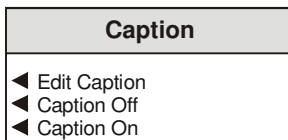
◀ **Pattern & Caption**

This item allows a pattern to be selected as the output, a caption to be setup and displayed.



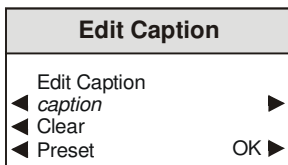
Note that the picture behind the caption will appear at half amplitude luminance.

◀ **Caption**



◀ **Edit Caption**

A 1 line caption of up to 19 characters may be set up by editing the text string.



Preset is IQARC01

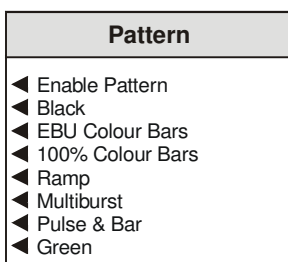
The caption may be selected as

◀ **Caption Off/On**

This function will either enable or disable the insertion of a caption on the selected insertion path.

◀ **Pattern**

This function will allow various patterns to be used as the output signal.



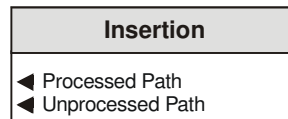
◀ **Enable Pattern**

When this item is selected a pattern from the list, will become the output signal.

Note: if patterns and caption are turned on at the same time then the pattern will default to black.

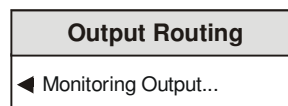
◀ **Insertion**

This item allows the pattern and caption to be inserted into either the Processed path or the Unprocessed path or both.

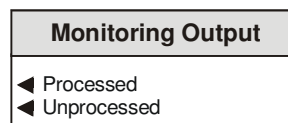


◀ **Output Routing**

This function allows what type of signal that appears at the three Monitoring outputs.



◀ **Monitoring Output**



◀ **Processed**

The output signal will be the fully processed path with aspect ratio, Proc Amp, etc. controls enabled.

◀ **Unprocessed**

The output signal will be the unprocessed path without any aspect ratio changes, Proc Amp etc.

◀ Standard (Input Standard)

This allows the input standard to be selected.

Standard	
◀ 525	625 ▶

◀ 525

If only this item is selected the unit will be forced to only accept a 525 line standard

625 ▶

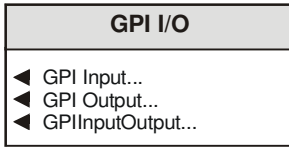
If only this item is selected the unit will be forced to only accept a 625 line standard

If both 525 and 625 are selected the unit will automatically operate at the incoming line standard.

If neither of the items are selected the input will be detected as an error, but the output will remain in the standard of the last selection.

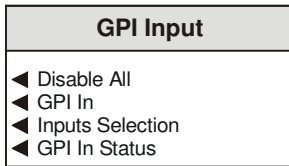
◀ **GPI/O**

This item allows the GPI connections to be configured.



◀ **GPI Input**

This item reveals the GPI input configuration menu.

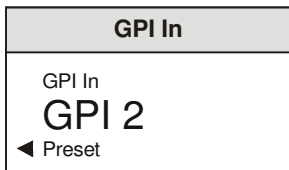


◀ **Disable All**

When selected the unit will ignore all GPI input changes.

◀ **GPI In**

The GPI input may be selected using this item.

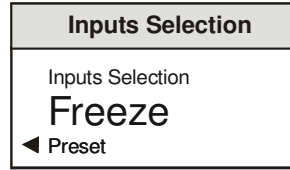


Selections available are:

- GPI_1 to 8
- GPI_O_IN_1 to 4

◀ **Inputs Selection**

The GPI input functions that may be selected using this menu.

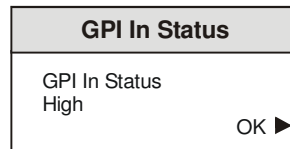


Selections available are:

- Unused** The function not active. This is also the Preset Setting.
- Pattern ON** The unit will produce a pattern output. Note that the caption function must be switched OFF.
- Freeze** The unit will enter the freeze mode.
- Memory 1 to 16** The unit will use the settings stored in the selected memory location.

◀ **GPI In Status**

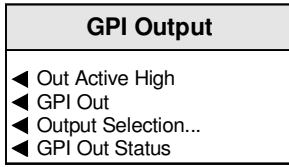
This will display the current status of the selected GPI input.



This may show either High (open circuit) or Low (closed circuit).

◀ **GPI Output**

This item reveals the GPI output configuration menu.

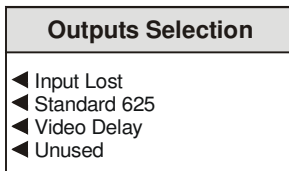


◀ **Out Active High**

When selected the GPI output will go from low to high when activated. When unselected the GPI output will go from high to low when activated.

◀ **Outputs Selection**

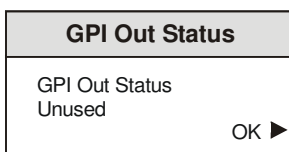
The GPO may be configured to produce an output corresponding to one of the following conditions selected from this menu.



- Input Lost Produces a high TTL level output if the input signal is present
- Standard 625 Produces a high TTL level output if the operating line standard is 625
- Video delay Produces a high TTL level pulse the length of which corresponds to the video delay through the unit
- Unused The function is not active (Preset setting)

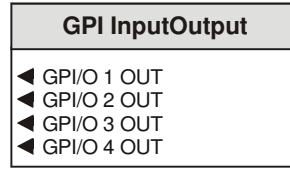
◀ **GPI Out Status**

This will display the current status of the selected GPI output.



This may show either Unused, Input (configured to be an input), Open, Closed or Delay in ms

◀ **GPI Input Output**



Four of the GPI inputs are configurable as GPI Outputs (GPI/O). When this is selected the corresponding GPI input is reconfigured as a GPI output.

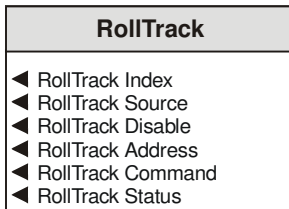
◀ **RollTrack**

This function allows information to be sent, via the RollCall™ network, to other compatible units connected on the same network.

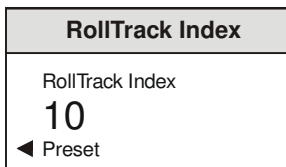
For example, it can enable compatible audio delay units to produce an audio delay dependent on this and other similar units. The audio delay unit will dynamically follow or track the received delay-time information. This allows processed video signals to be timed correctly with audio signals. This automatic tracking system via the RollCall™ network is call **RollTrack**.

*Note that before changing any RollTrack settings the **RollTrack Disable** item should be selected; when the changes have been completed the **RollTrack Disable** item should then be deselected.*

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



◀ **RollTrack Index**



This item allows up to 16 destinations to be selected.

◀ **RollTrack Source**

This allows the source of information that triggers the transmission of data to be selected.

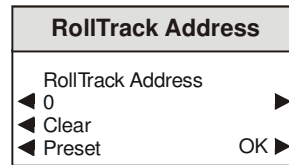


Options are:
 Unused (off) Preset
 Video Delay
 Input Present
 Input Missing
 Standard 525
 Standard 625

◀ **RollTrack Disable**

When selected this will disable all the RollTracks being generated from this unit.

◀ **RollTrack Address**



This item allows the RollTrack Address code to be set up using the adjacent push buttons to edit the text.

To edit the text the buttons adjacent to the upper text line in the menu are used to select the character position in the text and the spinwheel used to select the character.

(The right ▶ and left ◀ buttons select the cursor position and the spinwheel selects the character; the clear button sets the text line to all zero's and the OK button accepts the network address)

For more detailed information see the RollTrack section of this manual.

The full **RollTrack** address has four sets of numbers

For example: 0000:10:01*99

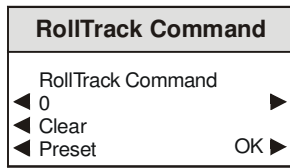
The first set (0000) is the network segment code number

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 (99) is a user settable ID number to help identify the sender in a multi-unit system

◀ **RollTrack Command**



The full **RollTrack** command has two sets of numbers.

For example: 84*156

The first set (84) is the **RollTrack** command number

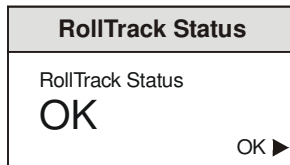
Note that only command numbers 14,15,16 and 17 should be used for audio delay

The second set (156) is the value sent with the **RollTrack** command number

*Note that when video delay is selected as the **RollTrack** source the value sent with the **RollTrack** command is the video delay value not the value set*

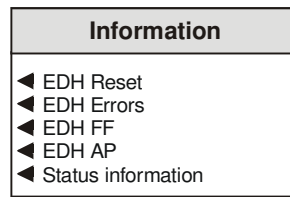
For details of the RollCall command values for specific units please contact your local Snell & Wilcox agent.

◀ **RollTrack Status**



This item will display the status of RollTrack.

◀ **Information**



This item allows the type of data shown in the information window, to be selected.

Options are:

EDH Reset	Resets EDH errors to zero
EDH Errors	Shows EDH Error seconds
EDH FF	Shows Full Field checksum
EDH AP	Shows Active Picture checksum
Status Information	Shows the status of the unit e.g. FRZ BYP MIN PAT

Where FRZ = Picture freeze
 BYP= Unit in Bypass
 MIN = Unit in Min Delay mode
 PAT = Pattern On

◀ **Default Out**

Default Out
◀ Freeze ◀ Black

If the input signal fails the output may be configured to become either Freeze (a frozen picture) or Black.

Note that the default output for the unprocessed path will always be to black.

◀ **Logging**

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

Logging
◀ INPUT ◀ STD ◀ EDH ◀ ERRSEC

Items that may be selected are as follows:

- INPUT Reports a loss of input signal
- STD Reports the operating standard
- EDH Reports an EDH error
- ERRSEC Reports the EDH error time in seconds

◀ **Smooth Transitions**

When the output picture size changes this function allows control over the way that the change of picture size occurs.

Smooth Transitions
◀ Manual/Min Delay

◀ **Manual/Min delay**

When selected the picture size will change smoothly to the new size.

When not selected the picture size will change instantaneously to the new size.

◀ **Terminology**

The notation used to express the aspect ratio may be chosen with this item.

Terminology
◀ WRT9 ◀ PB/LB ◀ Ratio

◀ **WRT9**

Aspect ratio of active image area expressed as a two digit abbreviated numeric value where the comparison ratio is against a height of 9. e.g. 12 is used for 4 by 3 (12 by 9).

◀ **PB/LB**

The visual effect of the image and display raster aspect ratios combined. PB (Pillar Box) is full height but with black down the sides. LB (Letter Box) is full width with black top and bottom.

◀ **Ratio**

The aspect ratio expressed as a numerical ratio of width to height.

◀ **Status**

This item allows the status of selected parameters to be displayed.

Status
◀ Input ◀ EDH

◀ **Input**

Input
◀ SDI ◀ Standard

This will allow the status of the SDI input signal and its line standard to be displayed.

◀ **EDH**

EDH
◀ EDH ◀ Error Count

This will allow the status of EDH and the error count to be displayed.

EDH/Error Count
EDH/Error Count 00
OK ▶

◀ Unit

This item allows information about the unit to be displayed and other functions to be activated.

Unit
◀ Software Version ◀ Serial Number ◀ Preset Unit ◀ Restart ◀ Build No

◀ Software Version

Software Version
Software Version x.x.x OK ▶

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

◀ Serial No.

Serial No
Serial No xxxxxxx OK ▶

This item shows the serial number of the module

◀ Build Number

Build Number
Build Number xxxxxxx OK ▶

This will indicate the factory build number. This number defines all parameters of the unit (software versions, build level etc.) for identification purposes.

APPENDIX 1 – Video Index and Enhanced Line 23

Video index is a signal embedded in the D1 output stream that can be used to convey aspect ratio information. The basic version of video index is described in SMPTE document RP186. An enhanced version of video index incorporating more aspect ratio information has been introduced in the United Kingdom for control of MPEG encoders. The IQARC01 supports both forms of video index and, they are referred to as SMPTE186 and AFD Spec' version throughout. (AFD is active format descriptor). The serial data format of the video index is described in SMPTE document SMPTE125M-1995.

In the United Kingdom, a modified version of line 23 Signaling which allows the embedding of the same information as that in AFD spec Video Index signals has been defined. The IQARC01 supports this AFD spec version of line 23 at both it's input and output. The new line 23 will be referred to as L23 AFD and the previous version of line 23 as L23 ETSI throughout.

Background Information on Video Index

The original SMPTE RP186 video index scheme includes in the very first data byte (Class 1.1 data Octet 1) a scanning system field. This can signal either 4:3 or 16:9 using the bottom 3 bits of the data byte as shown below.

Octet Value	Meaning	B2	B1	B0
0	no information	0	0	0
1	525/59.94 4:3	0	0	1
2	625/50 4:3	0	1	0
3	Reserved	0	1	1
4	Reserved	1	0	0
5	525/59.94 16:9	1	0	1
6	625/50 16:9	1	1	0
7-255	Reserved	1	1	1

Within Europe an extension to this data byte has been defined and is known as the ARDSPEC version. AFD being Active Region Descriptor. This retains the meaning of the bottom 3 bits of the data byte as 4:3 or 16:9 but in addition, it defines the meanings of the next 3 bits as follows.

Active format	Intended aspect ratio of active region	B5	B4	B3
0	Active region is same as coded frame	0	0	0
1	4:3	0	0	1
2	16:9	0	1	0
3	14:9	0	1	1
4	Reserved for future use	1	0	0
5	4:3 with shoot-and-protect 14:9 centre	1	0	1
6	16:9 with shoot-and-protect 14:9 centre	1	1	0
7	16:9 with shoot-and-protect 4:3 centre	1	1	1

The enhanced version of Line 23 (L23 AFD) basically embeds the same information in the line 23 data. i.e. the Scanning system and AFD fields. In addition, it provides four User bits.

The IQARC01 can read incoming aspect ratio Signaling and output it. This means that the aspect ratio conversion it performs can be automatically controlled by the incoming video signaling. It is possible to program the action that the IQARC01 takes for each of the incoming Signaling values.

Frame accurate timings include:

1. Output picture Size.
2. Output picture Aspect ratio.
3. Output picture Horizontal position.
4. Output picture Vertical position.
5. Output line 23 signal.
6. Output video index signal.

The video index information is inserted on line 11 and 324 for 625 line systems and lines 14 and 277 for 525 line systems.

