

# IQBRT8 Digital Audio Router

## Module Description

The IQBRT is a range of professional quality Synchronous Digital Audio Routers, and are capable of routing up to 8x8 AES/EBU pairs. The IQBRT can accept PCM digital audio at sampling rates of 16 kHz to 96 kHz and will automatically detect the recognised standards of 32, 44.1 and 48 kHz. The IQBRT accepts both AES/EBU and SPDIF (-B versions only) inputs, and outputs professional AES/EBU digital audio. The Router also has an AES/EBU monitoring output for previewing input material. The IQBRT sample rate converts all PCM audio inputs to 48 kHz with no loss of audio quality. The outputs are then synchronised to either 525 or 625 line video, or a 48 kHz AES Reference, and are frame aligned in accordance to the AES11 specification. In the absence of a reference the inputs can be re-sampled to an internal 48 kHz reference of 10ppm or Input 1. The IQBRT also accepts 48 kHz non-PCM audio bitstreams but must be synchronous to the IQBRT synchronising source.

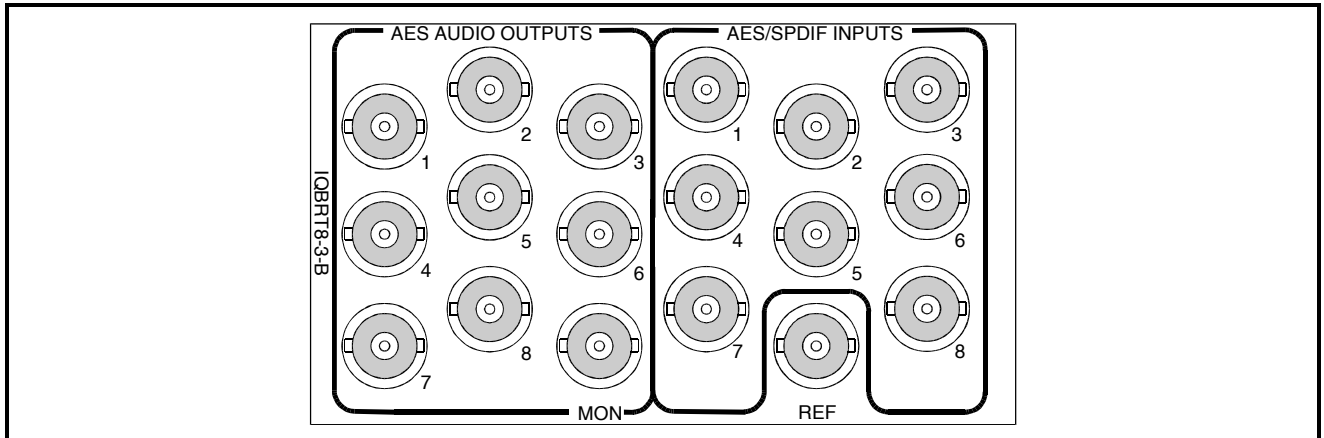
All switching of PCM audio is done via v-fading, to give seamless glitch-free routing. Non-PCM audio bitstreams are switched (with no data processing) on data packet boundaries.

The IQBRT Programme level on any of the inputs (AES pair) can be adjusted from  $\pm 6$ dB to  $-18$ dB in 0.1dB steps, each input can also be polarity inverted or muted. A built-in test tone generator is also included and can be assigned to any number of outputs for ease of system set-up.

The IQBRT's digital audio interface is available in either transformer coupled balanced (-D) or unbalanced (-B) type.

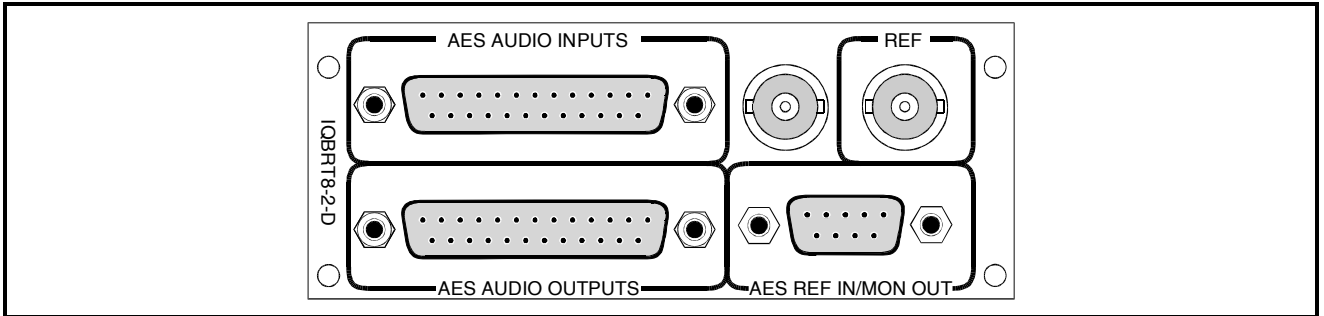
Full remote control via RollCall™ is included as standard, which will enables complete control over the IQBRT.

## REAR PANEL VIEWS



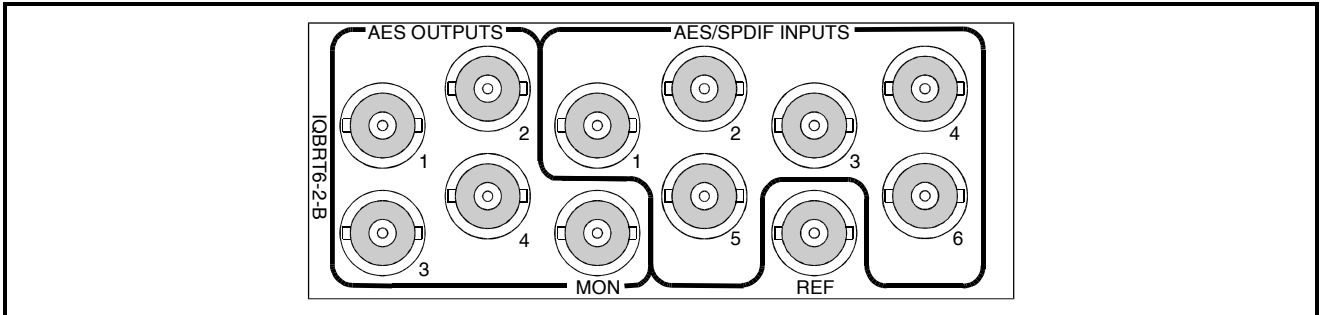
IQBRT8-3-B

IQBRT8 8x8 Digital Audio Router Unbalanced I/O



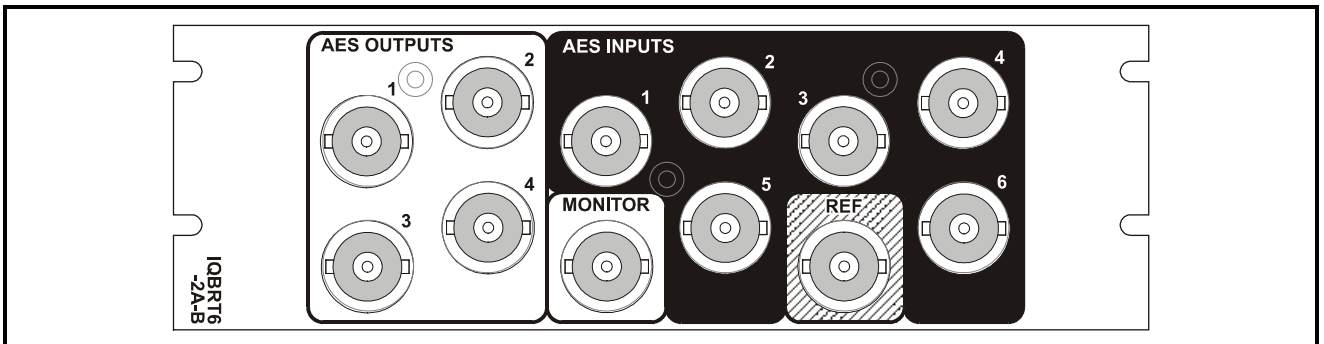
IQBRT8-2-D

IQBRT8 8x8 Digital Audio Router Balanced I/O



IQBRT6-2-B

IQBRT6 6x4 Digital Audio Router Unbalanced I/O



IQBRT6-2A-B

IQBRT6 6 x 4 Digital Audio Router Unbalanced I/O

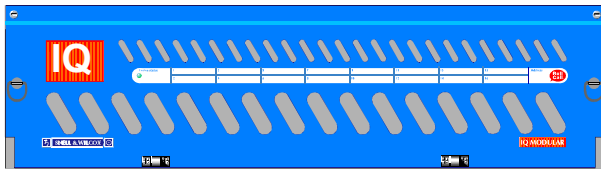
Versions of the module cards available are:

IQBRT8-2-D	IQBRT8 8 x 8 Digital Audio Router Balanced	Double width module
IQBRT8-3-B	IQBRT8 8 x 8 Digital Audio Router Unbalanced	Triple width module
IQBRT6-2-B	IQBRT6 6 x 4 Digital Audio Router Unbalanced	Double width module
IQBRT6-2A-B	IQBRT6 6 x 4 Digital Audio Router Unbalanced	Double width module

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

**‘A’ Style Enclosure**

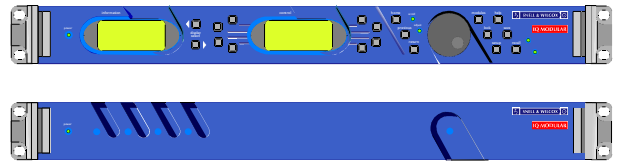
Rear panels **with** the suffix A may only be fitted into the ‘A’ style enclosure shown below.



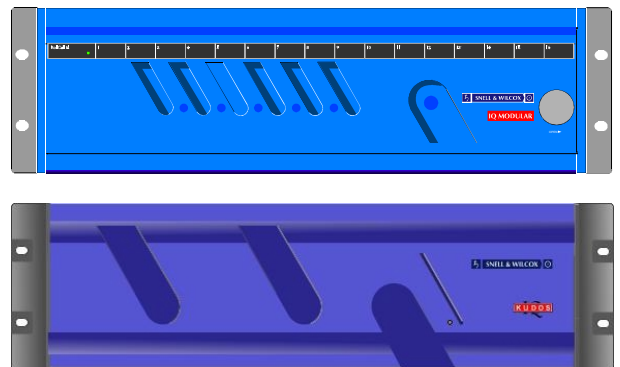
(Enclosure order codes IQH3A-E-O, IQH3A-E-P, IQH3A-N-O, IQH3A-N-P)

**‘O’ Style Enclosures**

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

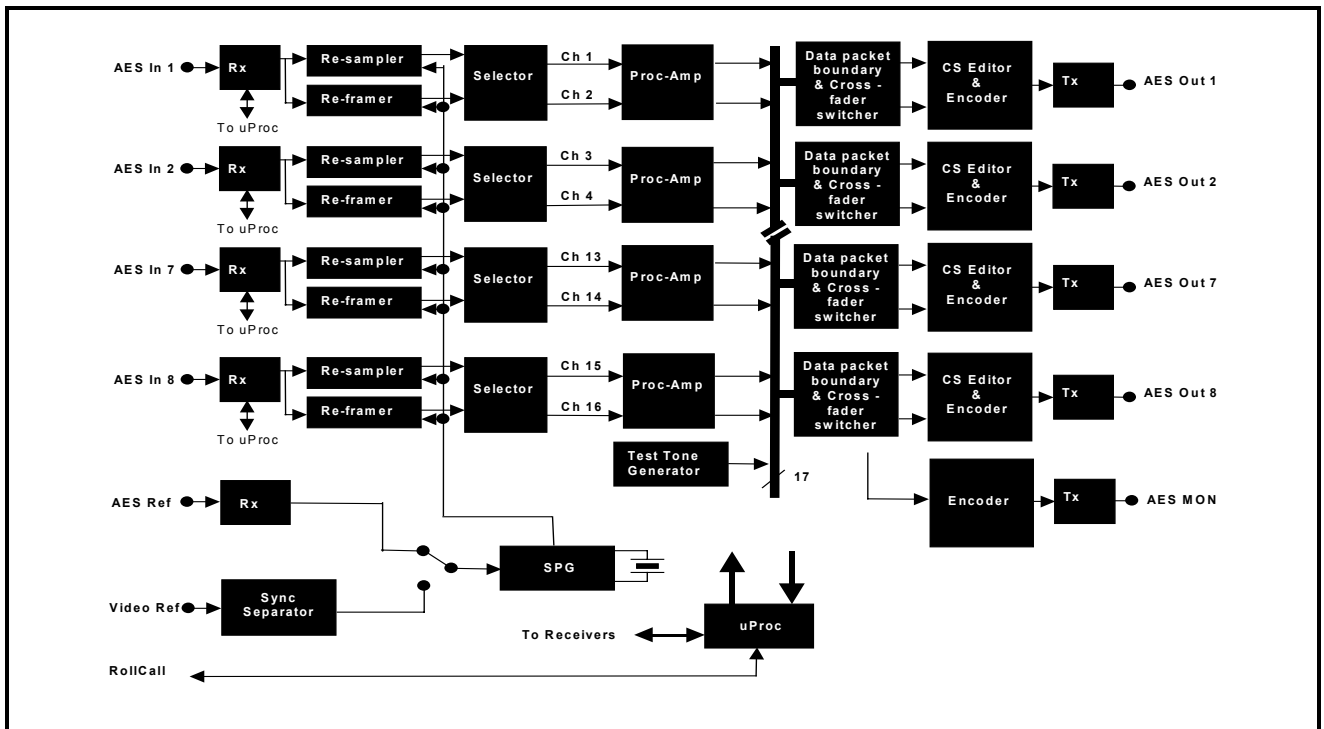


(Enclosure order codes IQH1S-RC-O, IQH1S-RC-AP, IQH1U-RC-O, IQH1U-RC-AP, Kudos Plus Products)



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

## BLOCK DIAGRAM



## Features

- Up to 8x8 AES/EBU Router for PCM and non-PCM audio , plus an AES Preview output
- 24 bit sampling rate converters on all inputs required to synchronize asynchronous digital audio to either 525 or 625 video, an AES Reference or freerun.
- Automatic 32, 44.1 and 48 kHz detection
- Professional AES/EBU 48 kHz output
- Unbalanced version is Dolby E compatible
- Glitch-free switching of digital audio.
- Input error detection indicator and reporting
- Independent phase reversal on any input subframe
- Support for non-PCM data, with automatic detection
- Data packet boundary switching for non-PCM audio bitstreams (no audio processing performed)
- Framing error correction of up to one sample
- Programme level adjust on each input channel from + 6 dB to -18 dB in 0.1 dB steps
- Built-in Test tone generator to ensure ease of system set-up
- Channel status monitoring of AES receivers and transmitters
- Channel status editor
- Remote Peak Programme Meter with adjustable 0 dB reference
- Eight memory locations for storage and recall of selectable parameters
- RollCall remote control and reporting/logging

## TECHNICAL PROFILE

**Features****Signal Inputs**

- Digital Audio Input (Balanced –D versions)  
8 Channel Pairs AES/EBU  
via 25 way D Connector
- Digital Audio Input (Unbalanced –B versions)  
8/6 Channel Pairs AES/EBU  
via BNC Connectors
- AES Reference Input (Balanced –D versions)  
Sample Frequency 48 kHz via 9  
way D Connector or via BNC  
connector
- Reference Input (Balanced –D versions)  
525/625 line Black Burst via BNC  
connector
- Reference Input (Unbalanced –B versions)  
525/625 line Black Burst, or  
unbalanced AES/EBU sample  
frequency 48 kHz via BNC  
connector

**Signal Outputs**

- Digital Audio (Balanced –D versions)  
8 channel pairs AES/EBU  
via 25 way D Connector
- Digital Audio (Unbalanced –B versions)  
8/4 channel pairs AES/EBU  
via BNC Connectors
- Digital Audio Monitor (Balanced –D versions)  
1 channel pair AES/EBU  
via 9 way D Connector
- Digital Audio Monitor (Unbalanced –B versions)  
1 channel pair AES/EBU  
via BNC Connector

**Card Edge Controls (also available via RollCall)**

- Router Mode only, Configure output channels  
Independently configure the 8  
outputs to any of the 8 inputs
- Take Button ..... Initiates routing

**Indicators**

- AES Input error ..... Illuminates when there is an error  
on the AES inputs
- Sync Loss ..... Illuminates when locking source is  
lost
- Take LED ..... Flashes when routing assignment  
has changed and requires initiating  
via take button
- Power OK ..... +5 V, -5 V

**Functions Available via RollCall™ Only**

- Input Sample rate detection Automatic 32, 44.1, 48 kHz  
detection
- Input programme level adjust  
Adjusts input programme level for  
each input channel from  
+ 6 dB to -18 dB in 0.1 dB steps
- Test tone insertion ..... Insert test tone or silence into any  
output sub-frame
- Test tone frequency ..... Select test tone frequency from  
250 Hz to 16 kHz in 250 Hz steps
- Lock select ..... Selects synchronizing source, from  
either:- Video, AES Reference,  
Input 1 or freerun
- AES Input status monitor ... Displays AES format and status
- Channel Status Monitor ..... Displays input or output channel  
status for any subframe
- Channel Status Editor ..... Enables user to edit Channel  
status information
- Peak Programme Meter for any input  
Scale of 0 - 7, 4 dB steps,  
adjustable 0 dBu reference ('4') –  
10 dBFS to  
-24 dBFS
- Phase reversal ..... Independent phase reversal for any  
input subframe
- Eight memory stores ..... Storage and recall of selected  
parameters

## Specifications

Input Impedance .....	Balanced 110 Ohm Unbalanced 75 Ohm
Cable Length .....	Balanced, > 150 m of AES3 Cable Unbalanced, up to 500 m of RG59 or Equivalent
Input Sample Frequency .....	16 – 96 kHz, Input '1' 48 kHz $\pm$ 2 Hz if selected as the locking reference
Output Impedance .....	Balanced 110 Ohm Unbalanced 75 Ohm
Output Signal level.....	Balanced 3 V pk to pk typical Unbalanced 1 V pk to pk typical
Output Return Loss (-B).....	33 dB at 6 MHz
Output Sampling .....	48 kHz frame locked to 48 kHz AES/EBU reference, 48 kHz frame locked to PAL video reference, 48 kHz frame locked to every 5th frame of an NTSC video reference (Conforms to AES11 – 1997 spec)
Free run stability Grade 2....	$\pm$ 10 ppm
Digital Reference Input Pull-In Range	$\pm$ 2 Hz

Distortion (THD + Noise) 24 bits	-117 dB, 1 kHz @ -1 dBFS, SRC I/O ratio < 0.33 to 1.7 -104 dB, 1 kHz @ -1 dBFS, SRC I/O ratio < 0.33 to 3
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Dynamic Range .....	120 dB
Channel Status delay .....	4 ms @ 48 KHz FSI/FSO
User data delay .....	4 ms @ 48 KHz FSI/FSO
Fader time.....	12.8 ms
Fader cut-off level .....	- 60 dBFS
Jitter.....	< 0.005 UI p-p
Audio processing delay (48 kHz I/O sample frequency)	1.9 ms max. with sampling rate conversion TBD $\mu$ s without sampling rate conversion

## Power Consumption

Module Power Consumption	IQBRT8 5.7W max (balanced versions) IQBRT8 7W max (unbalanced versions) IQBRT6 5.4W max (unbalanced versions)
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## Performance Information

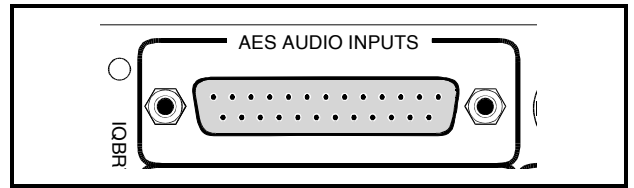
Standards .....	EN55103-1:1996 (Environment E2) EN55103-2:1996 (Environment E2) FCC Part 15, Class A (Verification)
Inrush Current .....	Please refer to IQ Modular Box manual
Performance Degradation:	None

INPUTS AND OUTPUTS

**AES Audio Inputs (-D version)**

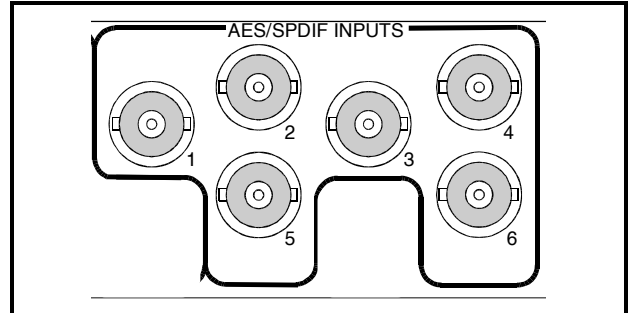
All AES Audio input connections are made via this 25 way female D-type connector.

For connection data consult the tables on page 5.



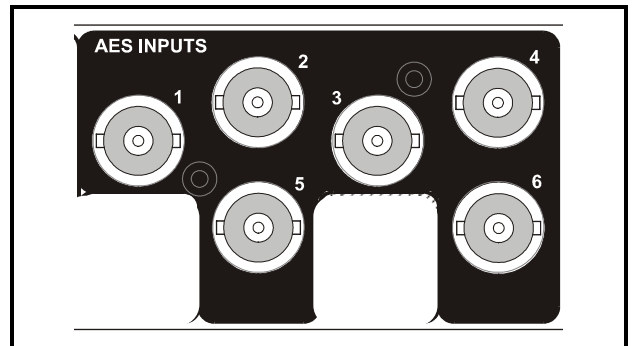
**AES Audio Inputs (-B versions)**

All AES Audio input connections are made via BNC connectors.



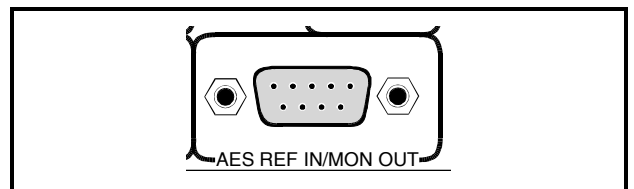
**AES Reference Input (-D version)**

A 48 kHz AES reference signal may be connected to this 9 way D connector. When this input is selected the outputs will be locked to this signal.



**Reference Input (-D version)**

This is for a video reference only. A black burst signal (525 or 625 line standard) may be connected to this BNC connector.

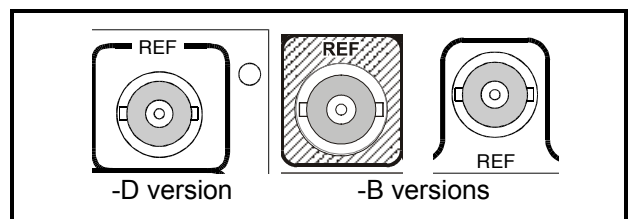


**Reference Input (-B versions)**

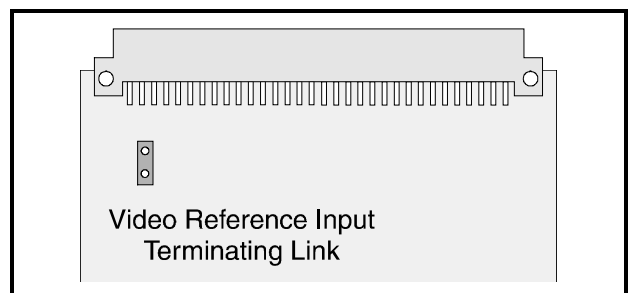
This is for a video reference and or an AES reference signal.

The video signal may be a black burst or a composite signal (525 or 625 line standard).

The AES reference should be a 48 kHz signal.



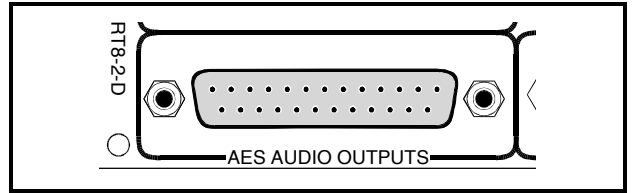
As supplied this input will terminate the signal in 75 Ohms. To change this to a high impedance input remove the link as shown opposite.



**AES Audio Outputs (-D versions)**

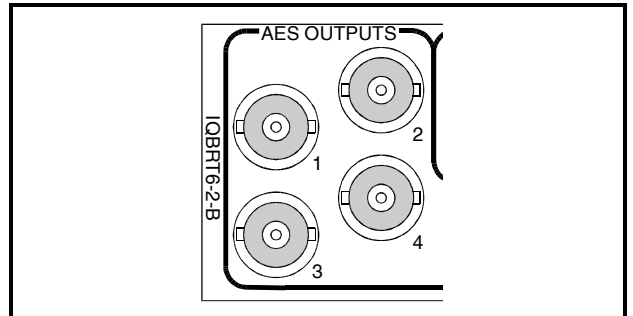
All AES Audio output connections are made via this 25 way female D-type connector.

For connection data consult the tables on page 5.



**AES Audio Outputs (-B versions)**

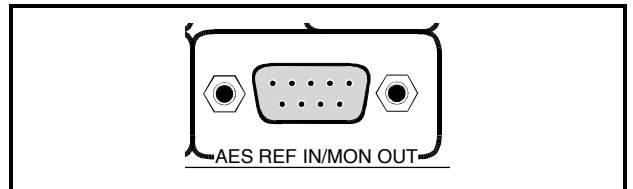
All AES Audio output connections are made via BNC connectors.



**Monitor Output (-D version)**

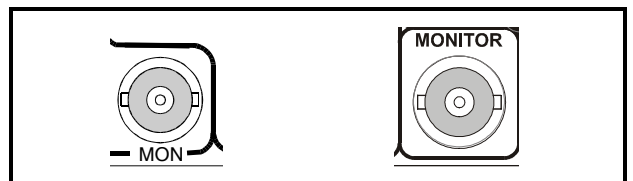
A channel status monitoring display output is also available from this 9 way D connector.

For connection data consult the tables on page 7.



**Monitor Output (-B versions)**

A monitoring output is also available from this BNC connector.





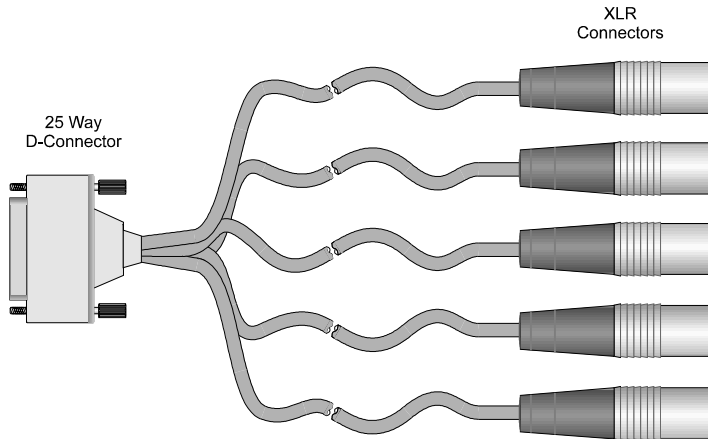
## 9 WAY D CONNECTOR IQBRT8-2-D

9 Way D Connector Pin Number	FUNCTION	Standard Pin Assignment
1		CHASSIS
6	AES REF IN 1 Ground	GND1
2	AES REF IN 1 +	1+
7	AES REF IN 1 -	1-
3	AES MON OUT +	2+
8	AES MON OUT -	2-
4	AES MON OUT Ground	GND2
9		GND3
5		3+

## 25 WAY D CONNECTION DATA IQBRT8-2-D

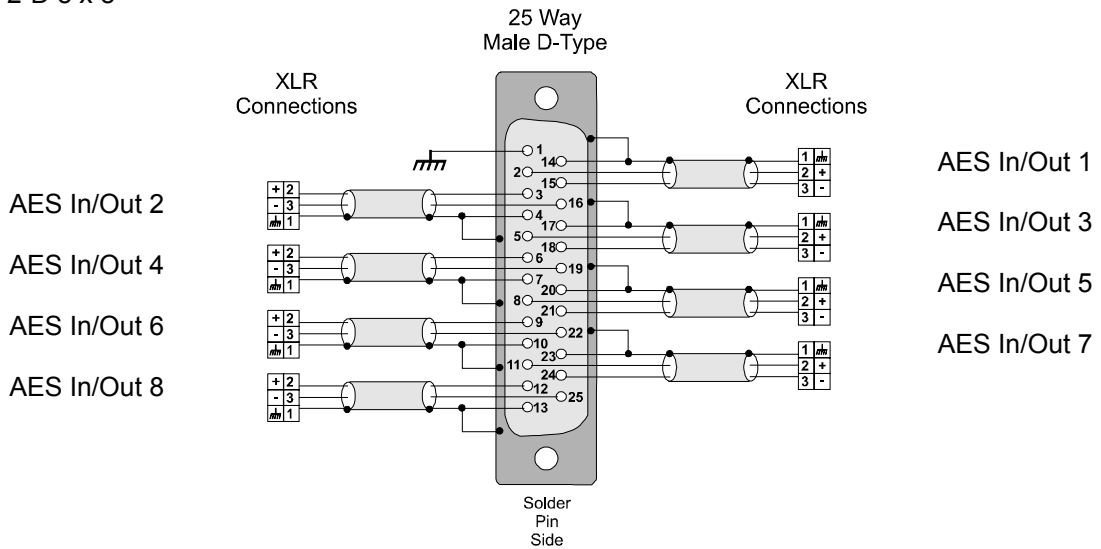
25 Way D Connector Pin Number	INPUTS IQBRT8-2-D	OUTPUTS IQBRT8-2-D	Standard Pin Assignment
1			CHASSIS
14	AES IN 1 Ground	AES OUT 1 Ground	GND1
2	AES IN 1 +	AES OUT 1 +	1+
15	AES IN 1 -	AES OUT 1 -	1-
3	AES IN 2 +	AES OUT 2 +	2+
16	AES IN 2 -	AES OUT 2 -	2-
4	AES IN 2 Ground	AES OUT 2 Ground	GND2
17	AES IN 3 Ground	AES OUT 3 Ground	GND3
5	AES IN 3 +	AES OUT 3 +	3+
18	AES IN 3 -	AES OUT 3 -	3-
6	AES IN 4 +	AES OUT 4 +	4+
19	AES IN 4 -	AES OUT 4 -	4-
7	AES IN 4 Ground	AES OUT 4 Ground	GND4
20	AES IN 5 Ground	AES OUT 5 Ground	GND5
8	AES IN 5 +	AES OUT 5 +	5+
21	AES IN 5 -	AES OUT 5 -	5-
9	AES IN 6 +	AES OUT 6 +	6+
22	AES IN 6 -	AES OUT 6 -	6-
10	AES IN 6 Ground	AES OUT 6 Ground	GND6
23	AES IN 7 Ground	AES OUT 7 Ground	GND7
11	AES IN 7 +	AES OUT 7 +	7+
24	AES IN 7 -	AES OUT 7 -	7-
12	AES IN 8 +	AES OUT 8 +	8+
25	AES IN 8 -	AES OUT 8 -	8-
13	AES IN Ground	AES OUT Ground	GND8

Example of Connection Details to XLR Connectors (-D versions)



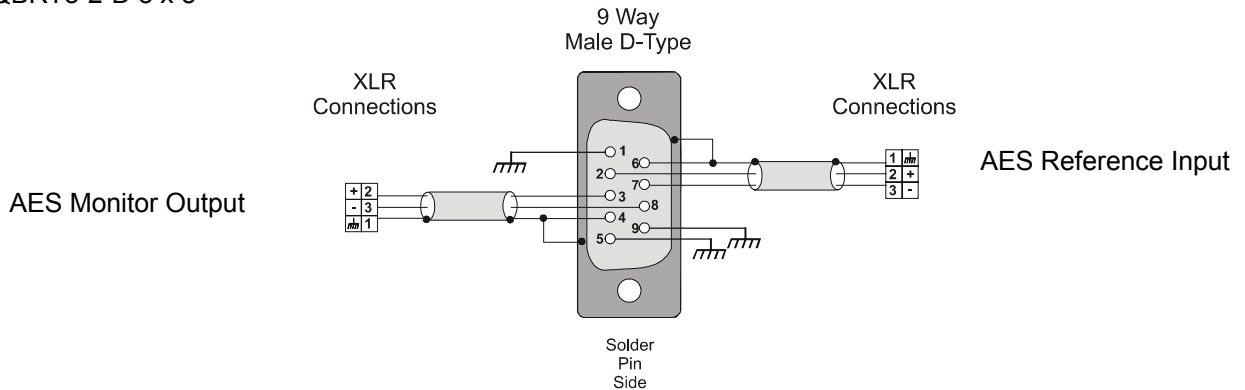
25 way Connection Data

IQBRT8-2-D 8 x 8

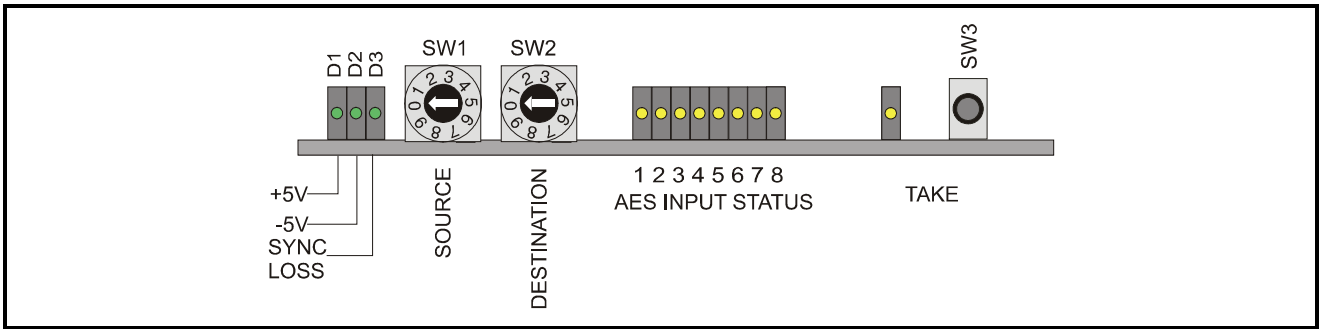


9 way Connection Data

IQBRT8-2-D 8 x 8



CARD EDGE CONTROLS



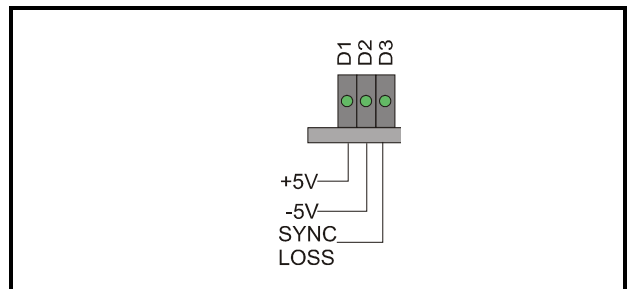
LED INDICATORS

**D1 and D2**

When illuminated, D1 and D2 indicate that the +5V and the -5V power supplies are present.

**D3**

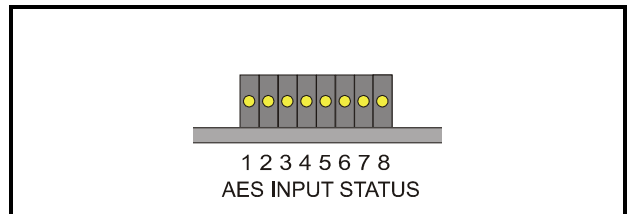
When illuminated, D3 will indicate that the selected locking source has been lost.



**AES Input Status**

These LED's indicate the status of the inputs.

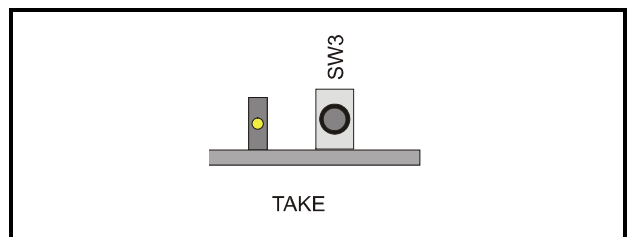
The LED will flash if there is no AES signal at that input. The LED will be OFF if the input is OK.



**Take**

If a routing assignment has been changed this LED will flash slowly for approximately 20 seconds, flash quickly for approximately 3 seconds and then stop.

The pushbutton should be pressed before the flashing stops to initiate the change.



**SW1**

This switch selects the source of the input signal as shown in the table below:

Position	Input Source
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	Silence
0	Do not use this position

*Note that only positions 1 to 6 and 9 are used on the IQBRT6-2.*

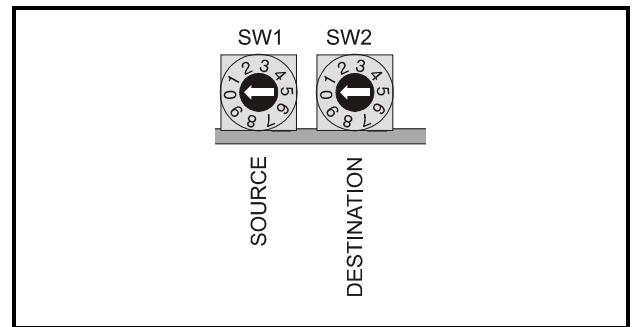
**SW2**

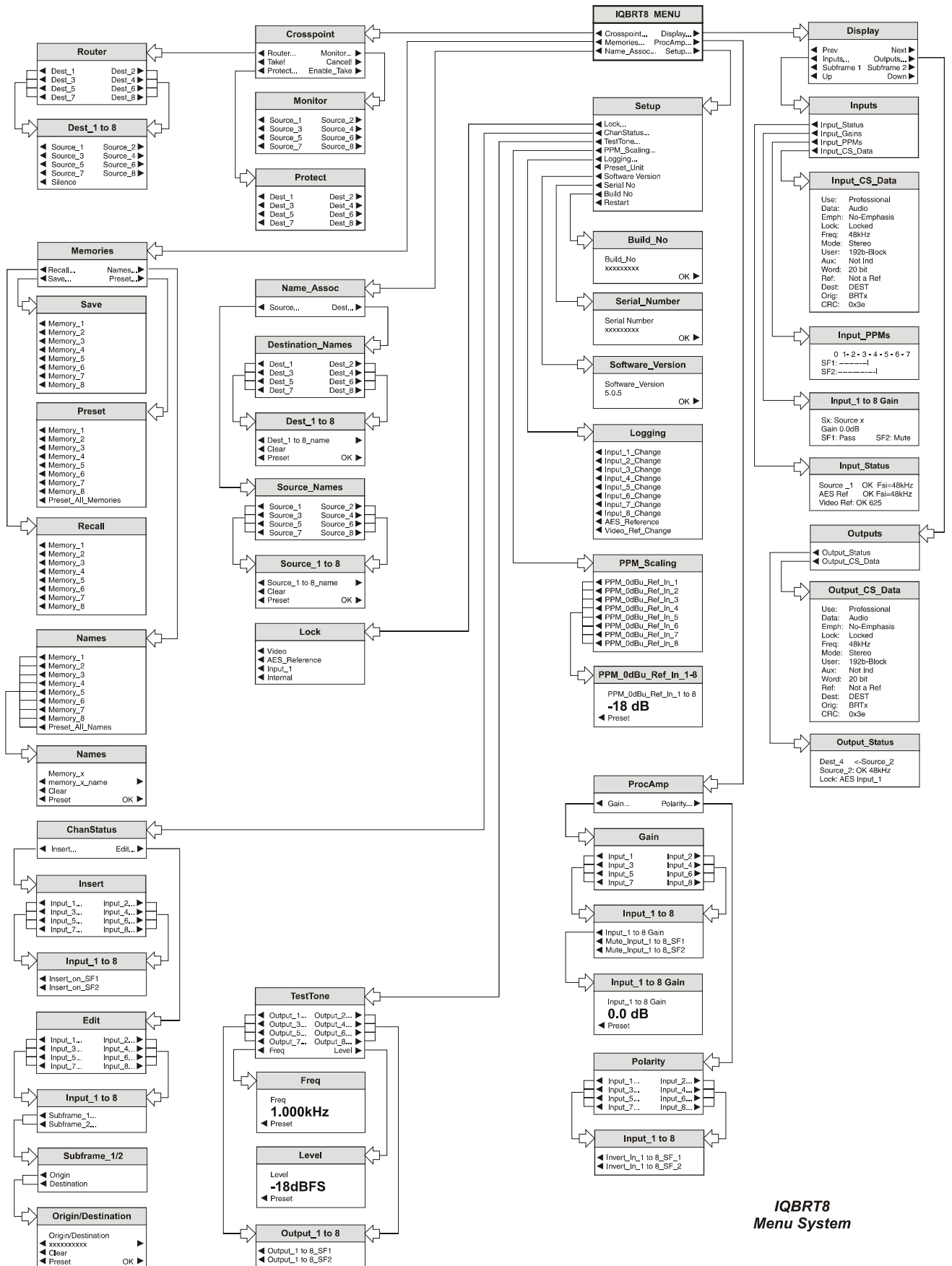
This switch selects the output destination as shown in the table below:

*Note that only positions 1 to 4 are used on the IQBRT6-2.*

Position	Output
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	Do not use this position
0	Do not use this position

*Note that after each change of the Input/Output routing the TAKE pushbutton should be pressed to initiate the change.*





**IQBRT8  
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 page 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.

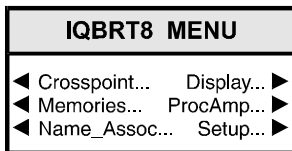
**MENU DETAILS**

(see IQBRT8 Menu System Opposite)

*Note that menus for the IQBRT6 are the same the IQBRT8 except for the number of inputs and outputs.*

**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.

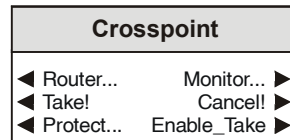


Note that where a menu item is followed by three dots (...) this indicates that a further sub-menu may be selected.

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.

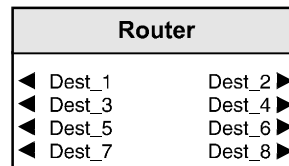
**◀ Crosspoint...**

This function allows the input/output routing to be set up and operated.



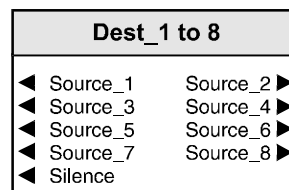
**◀ Router...**

The Router allows the assignment of any of the outputs (destinations) to any of the inputs (sources) or to silence.



◀ Dest\_1 to 7 Dest\_2 to 8 ▶

When a destination is selected this will reveal a menu that allows any of the sources (or silence) to be routed to this destination.



**◀ Take!**

Selecting this function will enable the changes made to the router assignments.

**Cancell... ▶**

Selecting this function will cancel any changes made to the router assignments if the **Enable\_Take** function has been selected.

### ◀ Enable\_Take

When selected (text highlighted) this function will allow the **Take** function to be operated.

When not selected (text normal) any changes made to the routing assignments will occur immediately.

Preset is to selected (text highlighted).

### ◀ Protect

This function allows the selected source/destination route to be locked. The route cannot then be disturbed by other controls.

Protect	
◀ Dest_1	Dest_2 ▶
◀ Dest_3	Dest_4 ▶
◀ Dest_5	Dest_6 ▶
◀ Dest_7	Dest_8 ▶

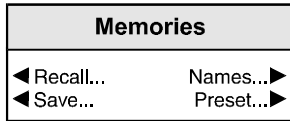
Monitor... ▶

Monitor	
◀ Source_1	Source_2 ▶
◀ Source_3	Source_4 ▶
◀ Source_5	Source_6 ▶
◀ Source_7	Source_8 ▶

This function allows an input source (before any processing) to be selected and monitored by an AES monitoring device connected to the monitoring output on the rear panel.

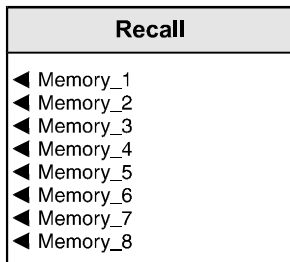
◀ **Memories...**

This function reveals a sub-menu that allows control of the memory functions.



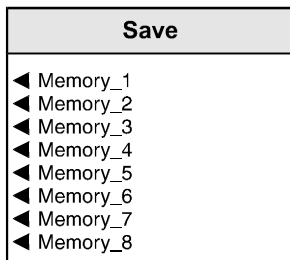
◀ **Recall...**

This function reveals a sub-menu that allows 8 different settings of all items to be recalled from the 8 memory locations as saved in the **Save** function.



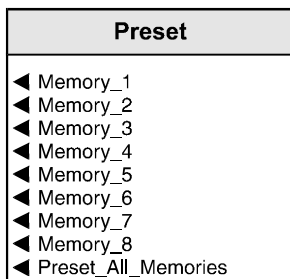
◀ **Save...**

This function reveals a sub-menu that allows the settings of all items to be saved. Up to 8 different set-ups may be saved in the 8 memory locations. They can all be renamed using the **Names** menu



**Preset... ▶**

This selection allows individual (select the location memory number), or all, (select Preset\_All\_Memories), memory locations to be preset to their default (factory) settings.



**Names... ▶**

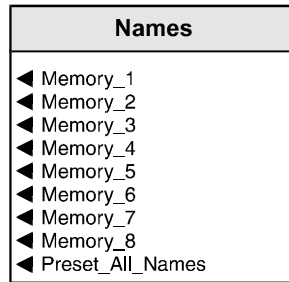
This selection allows the naming of memory 1 to 8 locations.

To name a memory location select:

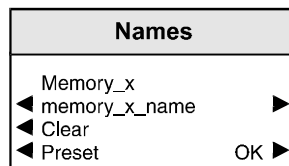
**Names... ▶** to reveal the sub-menu.

Select the memory location to be renamed e.g.

◀ **Memory\_1**



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



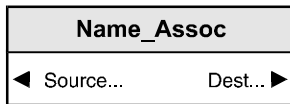
The ◀ **Clear** function blanks out the selected character.

The ◀ **Preset** function loads the default text, for example, Memory\_1.

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

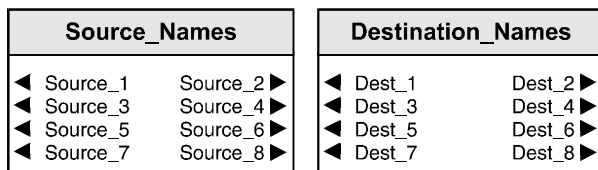


◀ Name\_Assoc...



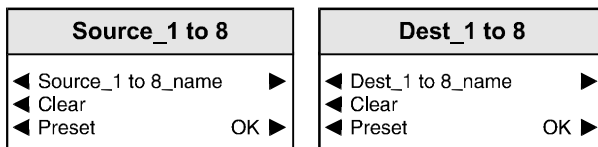
This selection allows the naming of the input sources and the output destinations. To name an association, select either ◀ **Source...** or ◀ **Dest...** to reveal the appropriate sub-menu.

Select the Source/Destination to be renamed from the list.



e.g. ◀ Source\_1

This will reveal the renaming screen.



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.

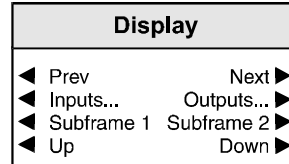
The ◀ **Preset** function loads the default text, for example, Memory\_1.

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

*Note that the new name will replace the old name in all relevant menus.*

Display... ▶

This menu allows information about the input/output signals and channel status to be displayed in the information LCD window.



◀ **Prev**

**Next** ▶

The previous and next functions allow the previous Input/Output or the next Input/Output to be selected for viewing in the information display.

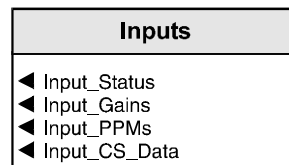
◀ **Subframe 1**

**Subframe 2** ▶

These functions allow information about the two subframes to be selected and viewed in the display. (Channel Status only)

◀ **Inputs...**

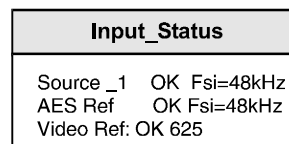
This item may be used to select the inputs for interrogation. Data will be shown in the Information LCD.



The following data may be displayed about the currently selected item (selected via the Display menu above). The ◀ **Prev** and **Next** ▶ functions should be used to select and display other items.

◀ **Input\_Status**

This will display information about the input and the reference source.



Fsi indicates the sample rate.

The line standard of the video reference is shown and may be 625 or 525 or LOST.

*Note that if the source or a reference signal has been lost OK will be replaced by \*\**

◀ Input\_Gains

This will display the gain settings of the selected input and also the sampling rate.

The display will also indicate whether or not the input has been inverted by inserting a suffix of **INV** or if the input has been muted by inserting **MUTED**. If the input characteristics have not been changed **PASS** will be shown.

Input_1 to 8 Gain	
Sx: Source x	
Gain 0.0dB	
SF1: Pass	SF2: Mute

◀ Input\_PPMS

This selection will reveal a bargraph display showing the peak level of the both input subframes of the selected input.

The scale is divided into 8 equal divisions, each representing a 4 dB level increment.

The 0 dB point is defined as 4 and maybe set to between -12 dBFS and -24 dBFS using the **PPM Scaling** item in the **Setup** menu.

Input_PPMS	
0 1-2-3-4-5-6-7	
SF1:-----	
SF2:-----	

This metering function follows standard Peak Programme characteristics.

◀ Input\_CS\_Data

Selecting this item will display information about the Source channel status (for the selected subframe), examples of which are shown below:

Input_CS_Data	
Use:	Professional
Data:	Audio
Emph:	No-Emphasis
Lock:	Locked
Freq:	48kHz
Mode:	Stereo
User:	192b-Block
Aux:	Not Ind
Word:	20 bit
Ref:	Not a Ref
Dest:	DEST
Orig:	BRTx
CRC:	0x3e

◀ Up

Down ▶

These buttons should be used to scroll through the items in the above menu.

Outputs...▶

This menu allows information about the status of the output and will be displayed in the information LCD window.

Outputs	
◀ Output_Status	
◀ Output_CS_Data	

Selections available are:

◀ Output\_Status

Output_Status	
Dest_4	<-Source_2
Source_2:	OK 48kHz
Lock:	AES Input_1

The first line shows which input (Source) is routed to which selected output (Destination).

The second line provides data about the Source signal and its' sample rate.

The third line gives data about the Locking signal as selected via the ◀ **Lock** function.

This may be either:

- Video Reference
- Input 1
- AES Reference
- Internal

◀ Output\_CS\_Data

Selecting this item will display information about the output channel status (for the selected subframe), examples of which are shown below:

Output_CS_Data	
Use:	Professional
Data:	Audio
Emph:	No-Emphasis
Lock:	Locked
Freq:	48kHz
Mode:	Stereo
User:	192b-Block
Aux:	Not Ind
Word:	20 bit
Ref:	Not a Ref
Dest:	DEST
Orig:	BRTx
CRC:	0x3e

◀ Up

Down ▶

These buttons should be used to scroll through the items in the above menu.

ProcAmp... ▶

ProcAmp	
◀ Gain...	Polarity... ▶

◀ Gain...

This function allows the inputs to be muted and **INPUT** gain to be adjusted.

Gain	
◀ Input_1	Input_2 ▶
◀ Input_3	Input_4 ▶
◀ Input_5	Input_6 ▶
◀ Input_7	Input_8 ▶

*Note if a non-audio input source (AC3 or other compressed audio data) has been detected the Procamp and other processing settings (except routing functions) will be disabled and the signal will pass through unprocessed.*

*Also under these conditions the "Fsi: " item in the information display will be replaced with "NON-PCM", as it is assumed that the non-audio data-sampling rate is 48 KHz.*

◀ Input\_1 to 7

Input\_2 to 8... ▶

Selecting an input will reveal a menu that allows the gain of that input to be adjusted and either of the subframes to be muted.

Input_1 to 8	
◀ Input_1 to 8 Gain	
◀ Mute_Input_1 to 8_SF1	
◀ Mute_Input_1 to 8_SF2	

◀ Input\_1 to 8 Gain...

Input_1 to 8 Gain	
Input_1 to 8 Gain	
<b>0.0 dB</b>	
◀ Preset	

The gain function reveals a numerical display showing the gain in dB that is adjustable using the spinwheel.

The range of adjustment is from -18 dB to +6 dB in steps of 0.1 dB. Preset is to 0. 0dB.

◀ Mute\_Input\_1 to 8 SF1

Selecting this item will mute Subframe 1 of the selected Input.

◀ Mute\_Input\_1 to 8 SF2

Selecting this item will mute Subframe 2 of the selected Input.

Polarity... ▶

This allows the inversion of any of the input subframes (phase swapping of 180<sup>o</sup>).

Polarity	
◀ Input_1...	Input_2... ▶
◀ Input_3...	Input_4... ▶
◀ Input_5...	Input_6... ▶
◀ Input_7...	Input_8... ▶

◀ Input\_1 to 7...

Input\_2 to 8... ▶

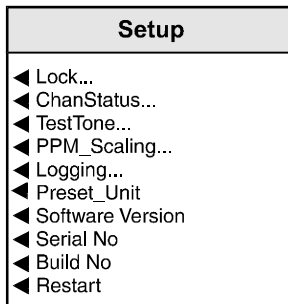
The input should be selected from the **Polarity** menu and the inverting action selected from the following menu:

Input_1 to 8	
◀ Invert_In_1 to 8_SF_1	
◀ Invert_In_1 to 8_SF_2	

*Note that when the text is highlighted polarity is inverted.*

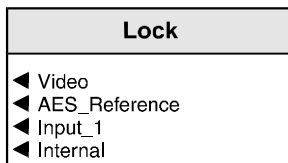
**Setup... ▶**

This selection reveals a sub-menu that allows various functions to be set.



**◀ Lock**

This selection reveals a sub-menu that allows the option to reframe the input(s) to different reference signals.



If no locking inputs are detected then the unit will revert to the internal mode (free-running at 48 kHz)

The locking information will be displayed when the Inputs display is selected.

*Selections available are:*

**◀ Video**

Unit will lock to the video input Reference signal

**◀ AES\_Reference**

Unit will lock to the AES Reference.

*Note that when locking to the AES reference the pull in range is  $\pm 2$  Hz, if the reference is 48 KHz but out of this range (PLL unable to maintain lock) the information display will indicate "ERR" instead of "OK" and Fsi will indicate the reference input sampling rate to the nearest 1 kHz.*

**◀ Input\_1**

Unit will lock to the signal at Input 1

**◀ Internal**

The unit will free-run at a sample rate of 48 kHz.

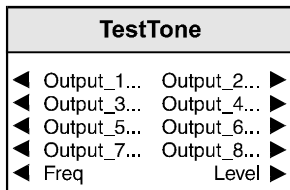


◀ TestTone

Level... ▶

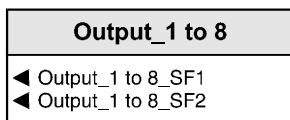
An audio tone may be selected for the outputs. The frequency and amplitude may be set for both subframes.

*Note that the test tone and level set here will be used for all applications. It is not possible to select different tones for different outputs or subframes.*



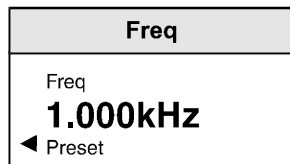
◀ Output\_1 to 7                      Output\_2 to 8... ▶

Selecting the particular output will allow either one or both of the subframes to be selected to have the test tone applied.



Once the output and the subframe has been selected the frequency and amplitude of the tone may be set.

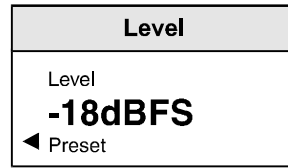
◀ Freq



The frequency may be set from 250 Hz to 15.750 kHz in steps of 250 Hz.

Pressing the **Return** button on the front panel will select the value that is displayed in the window.

Preset value is 1.000 kHz



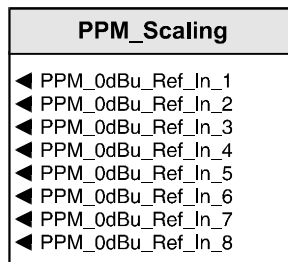
The amplitude may be set from -18 dBFS to 0 dBFS in steps of 6 dB.

Pressing the **Return** button on the front panel will select the value that is displayed in the window.

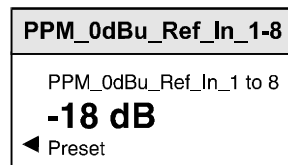
Preset value is -18 dBFS

◀ PPM\_Scaling

These selections will reveal a numerical display of dB's that sets the 0 dBu reference point for Inputs 1 to 8.



The value may set be from -12 dB to -24 dB in steps of 1 dB.



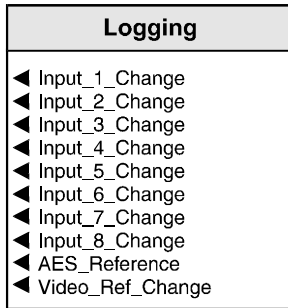
Pressing the **Return** button on the front panel will select the value that is displayed in the window.

Preset value is -18 dB

◀ **Logging**

If a logging device is attached to the RollCall™ network, information about various parameters will be reported to the logging device assigned in the Remote Control Interface system. (See Section 1, The RCIF Menu System)

The logging sub-menu allows the following information to be made available for logging:



◀ **Input\_1 to 8\_Change**

These report any changes of the sample rate and presence of inputs 1 to 8.

◀ **AES\_Reference**

This reports any changes of the sample rate and presence of the AES reference signal.

◀ **Video\_Ref\_Change**

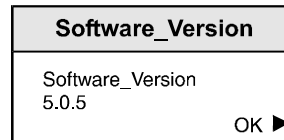
This reports any changes of the sample rate and presence of the Video reference signal.

Factory preset is nothing enabled

◀ **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.

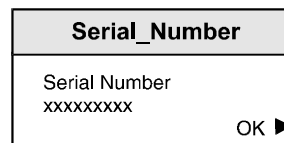
◀ **Software\_Version**



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

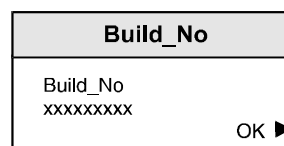
◀ **Serial\_Number**

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



◀ **Build\_Number**

Selecting this item reveals a display showing the factory build number of the module. Select OK to return to the System Menu.



◀ **Restart**

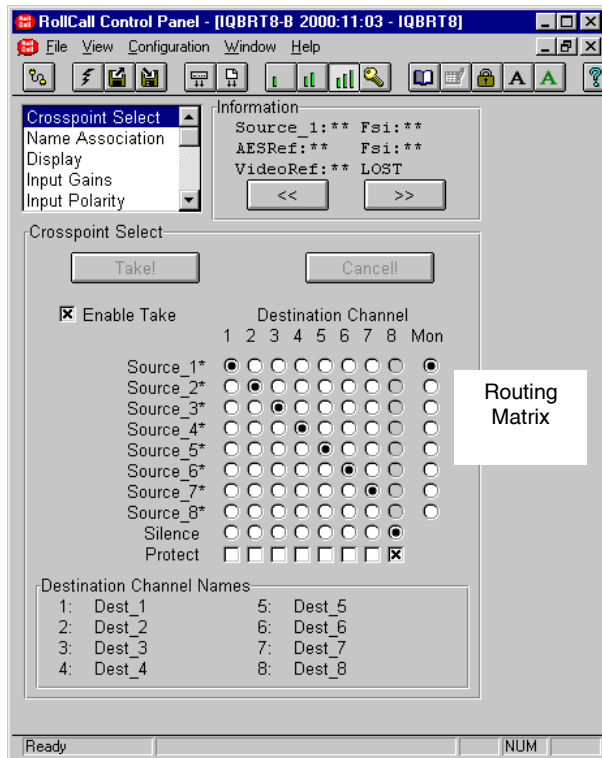
This function allows the unit to reboot and all power-up settings to be enabled. This is an easier method than switching the mains power on and off.

**RollCall Control Templates for the IQBRT8**

Note that templates for the IQBRT6 are the same the IQBRT8 except for the number of inputs and outputs.

The first item in the menu is

**Crosspoint Select**



**The Routing Matrix**

This function allows the input/output routing to be set up by checking the boxes for the source and destination channels.

**Silence** may also be chosen as a source for a destination.

**Protect**

If a Protect box is checked that particular source/destination route will be locked and cannot be disturbed by other controls.

**Mon (Monitor)**

This function allows an input source (before any processing) to be selected and monitored by an AES monitoring device connected to the monitoring output on the rear panel.

**Enable Take**

When selected this function will allow the **Take** function to be operated.

When not selected any changes made to the routing assignments will occur immediately.

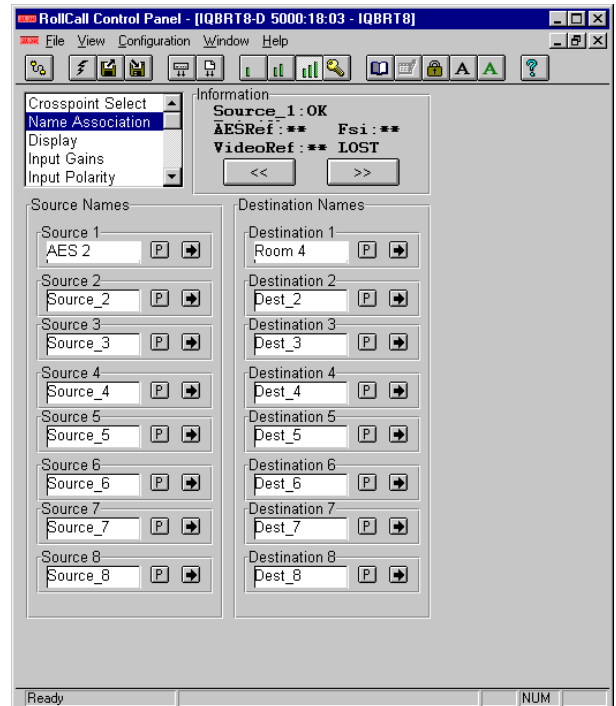


Selecting this function will enable the changes made to the router assignments.



Selecting this function will cancel any changes made to the router assignments if the **Enable Take** function has been selected.

**Name Association**



**Source and Destination Names**

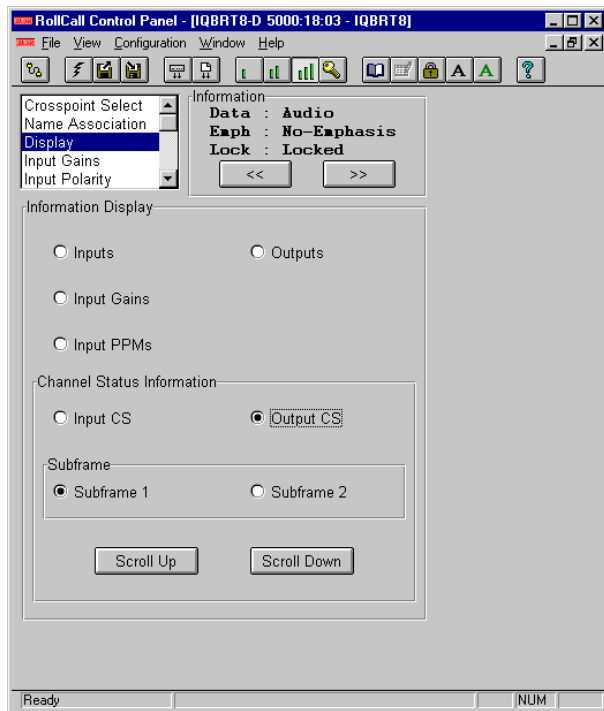
This selection allows the naming of the input sources and the output destinations.

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

Preset returns to the default names.



**Display**



This screen allows information about the input/output signals and channel status to be displayed.

Use  and 

to allow the desired input/output to be selected for viewing in the information display.

**Inputs**

This item may be used to select the inputs for interrogation.

**Outputs**

This item may be used to select the outputs for interrogation.

**Input Gains**

This will display the gain settings of the selected input and also the sampling rate.

This will also indicate whether or not the input has been inverted by inserting a suffix of INV or if the input has been muted by inserting MUTED. If the input characteristics have not been changed PASS will be shown.

**Input PPMs**

This will show the PPM for the selected input.

**Channel Status Information**

This can be used to show channel status information for the input or the output.

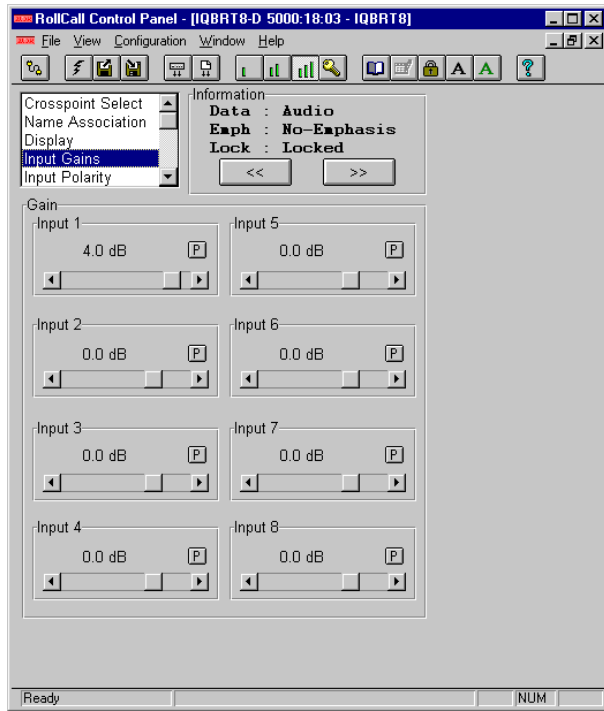
**Subframe 1 and Subframe 2**

These functions allow information about the two subframes to be selected and viewed. (Channel Status only)



Use **Scroll Up** and **Scroll Down** to scroll through the Channel Status list.

**Input Gains**

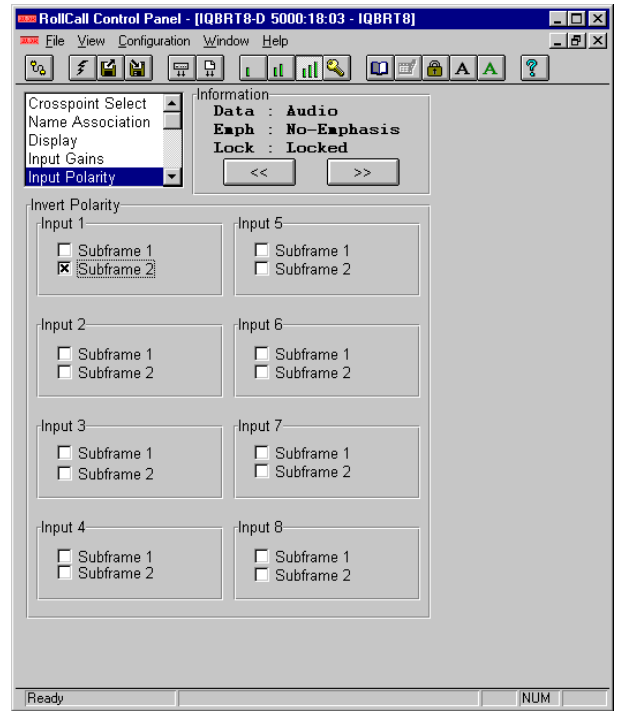


**Gain**

This screen allows the input gain to set for each of the eight inputs.

The range of adjustment is from -18 dB to +6 dB in steps of 0.1 dB. Preset is to 0.0dB.

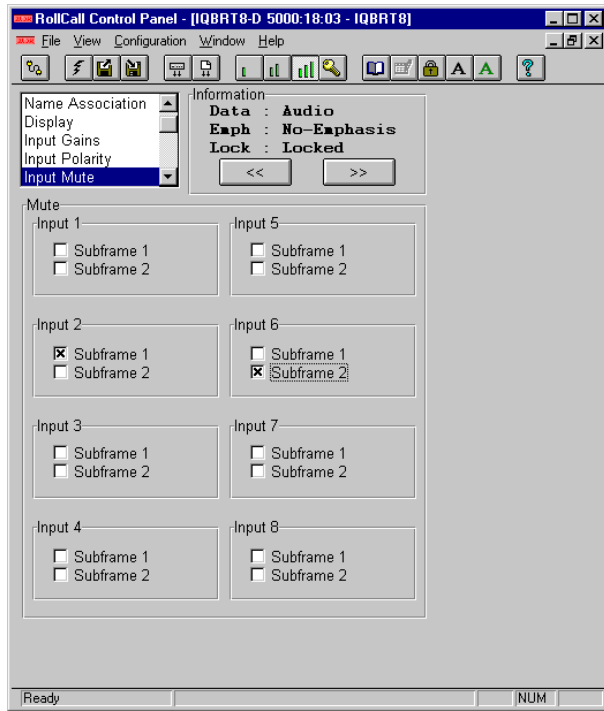
**Input Polarity**



**Invert Polarity**

This allows the inversion of any of the input subframes (phase swapping of 180°).

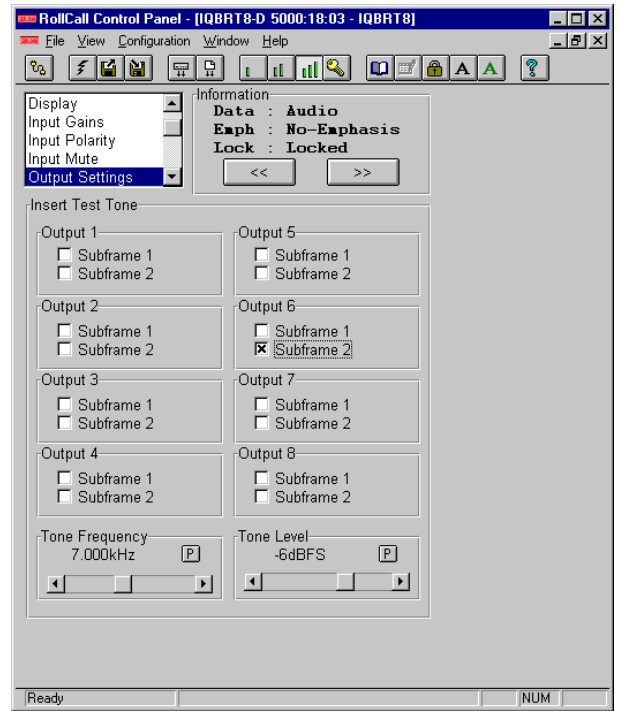
**Input Mute**



**Mute**

This screen allows any of the input subframes to be muted.

**Output Settings**



**Insert Test Tone**

This screen allows an audio tone to be selected for the outputs and either of the subframes.

*Note that the test tone and level set here will be used for all applications. It is not possible to select different tones for different outputs or subframes*

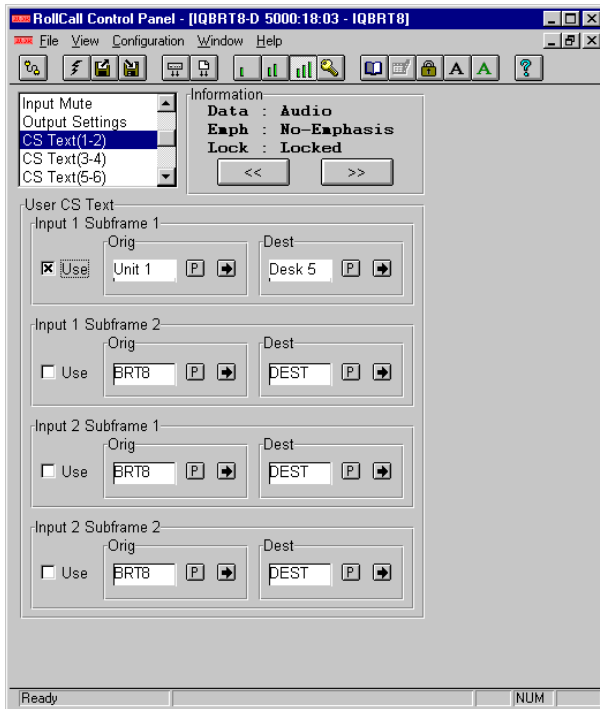
The tone frequency may be set from 250 Hz to 15.750 kHz in steps of 250 Hz.

Preset value is 1.000 kHz


The tone amplitude may be set from -18 dBFS to 0 dBFS in steps of 6 dB.


Preset value is -18 dBFS

## Channel Status Text



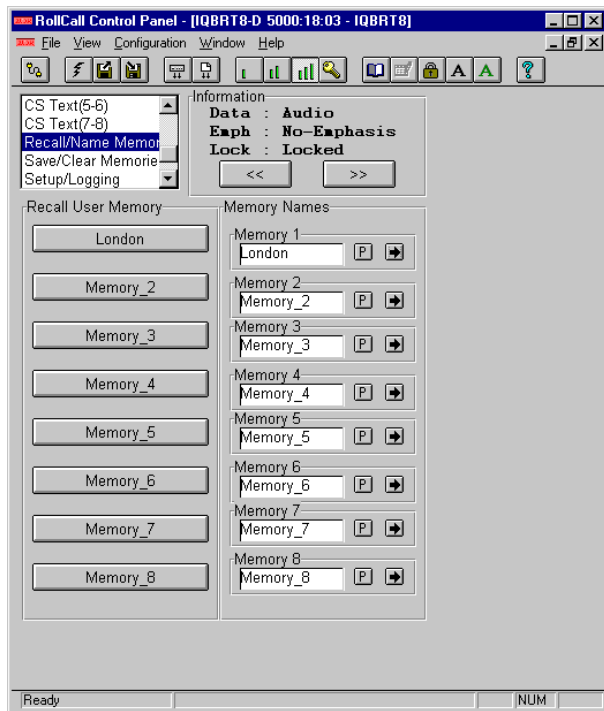
This screen allows channel status information for the origins and the destinations to be inserted, edited and enabled.

To change the information type the new data in the text area and select  (return)

Preset  returns to the default names.

To enable the new data check the **Use** box.

**Recall/Rename Memories**



**Recall User Memory**

This function allows 8 different settings of all items to be recalled from the 8 memory locations as saved in the **Save User Memory** function.

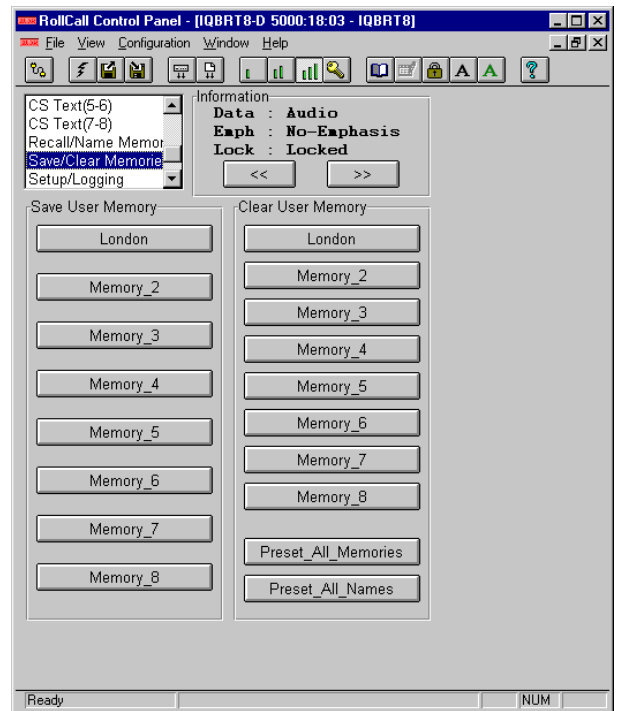
**Memory Names**

This allows the naming of the eight memory.

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

Preset returns to the default names.

**Save/Clear Memories**



**Save User Memory**

This function allows the settings of all items to be saved. Up to 8 different set-ups may be saved in the 8 memory locations

*Note that if a memory location already contains saved data, an asterisk \* will appear to the right of the memory location number.*

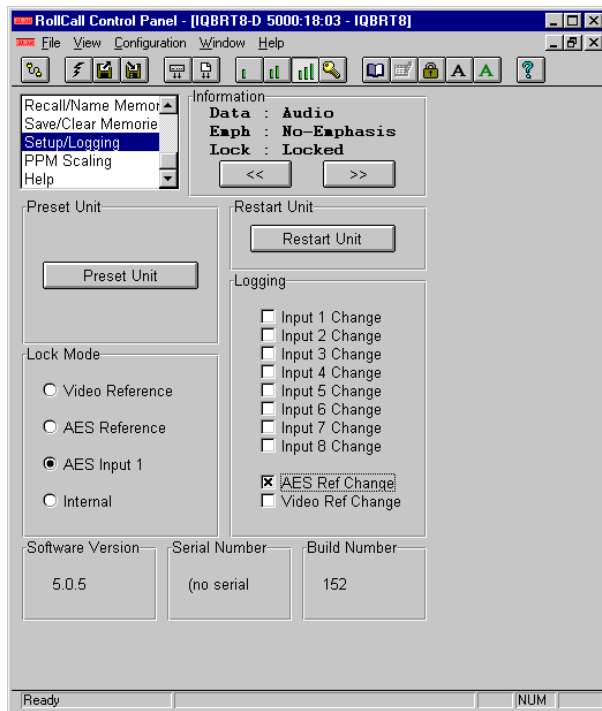
**Preset All Memories**

This item allows all memory locations to be cleared and returned to their default (preset) settings.

**Preset All Names**

This item allows all memory names to be returned to their default (preset) names.

## Setup/Logging



### Preset Unit

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

*Note that this is a momentary action.*

### Restart

This function allows the unit to reboot and all power-up settings to be enabled. This is an easier method than switching the mains power on and off.

### Lock Mode

This function allows the option to reframe the input(s) to different reference signals.

If no locking inputs are detected then the unit will revert to the internal mode (free-running at 48 kHz)

The locking panel information will be displayed in the information area.

*Selections available are:*

#### Video

Unit will lock to the video input Reference signal

#### AES\_Reference

Unit will lock to the AES Reference.

*Note that when locking to the AES reference the pull in range is  $\pm 2$  Hz, if the reference is 48 KHz but out of this range (PLL unable to maintain lock) the information display will indicate "ERR" instead of "OK" and Fsi will indicate the reference input sampling rate to the nearest 1 kHz.*

### AES Input\_1

Unit will lock to the signal at Input 1

### Internal

The unit will free-run at a sample rate of 48 kHz.

### 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 factory build number of the module.

### Logging

If a logging device is attached to the RollCall™ network, information about various parameters will be reported to the logging device assigned in the Remote Control Interface system. (See Section 1, The RCIF Menu System)

The following information to be made available for logging:

#### Input 1 to 8 Change

These report any changes of the sample rate and presence of inputs 1 to 8.

#### AES Ref Change

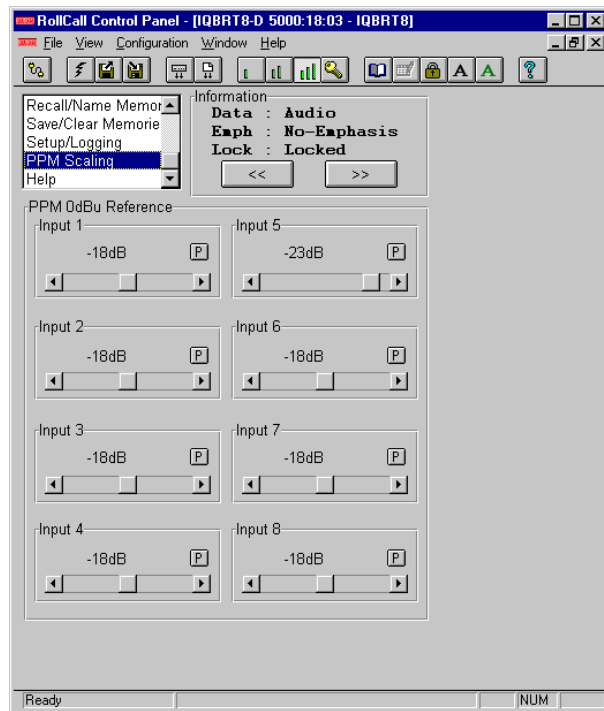
This reports any changes of the sample rate and presence of the AES reference signal.

#### ◀ Video Ref Change

This reports any changes of the sample rate and presence of the Video reference signal.

Factory preset is nothing enabled

PPM Scaling



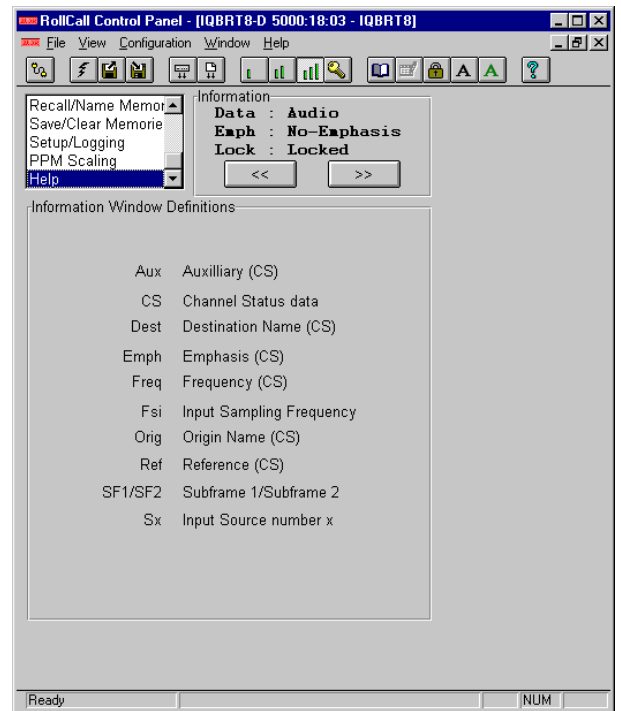
PPM Odbu Reference

These selections allow the 0 dBu reference point for Inputs 1 to 8 to be set.

The value may set be from -12 dB to -24 dB in steps of 1 dB.

Preset value is -18 dB

Help



Information Window Definitions

This screen explains the abbreviations that appear in the information window.

