IQBDAR Digital Audio Reference Generator

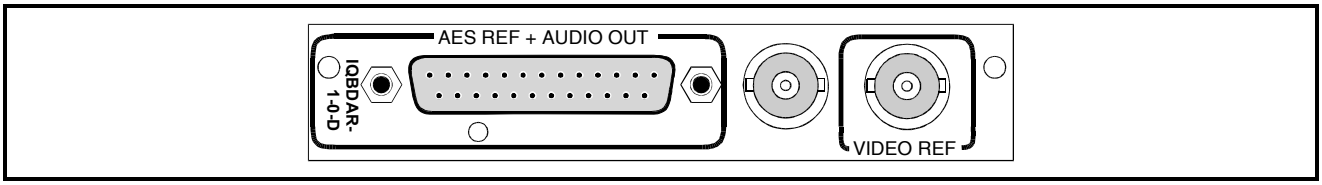
Module Description

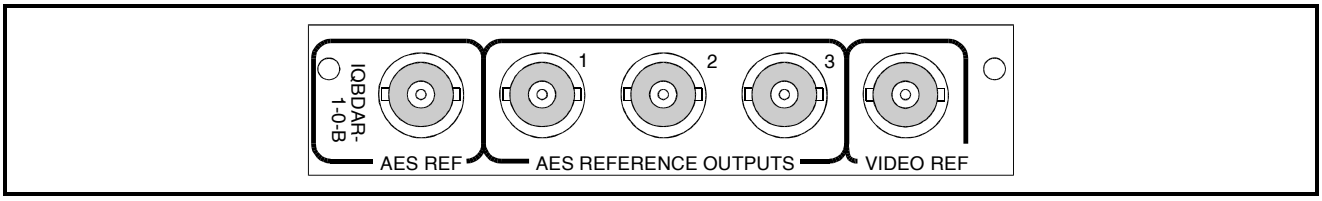
The IQBDAR digital audio reference generator provides 7 balanced outputs or 8 unbalanced outputs of AES11 standard 48 kHz audio. The output audio clock may free-run or be locked to either video black or an AES/EBU 48 kHz audio input. As standard, the free-run stability is 10ppm with an option for a 1ppm grade 1 reference. Digital silence or a variety of tones and pulses are available.

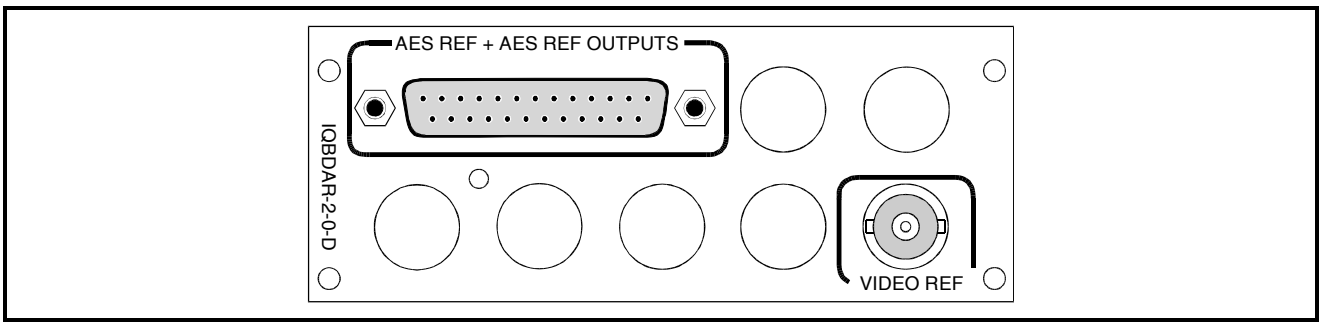
The video lock circuitry automatically detects 525 or 625 line video black inputs. Versions are available with the audio input and outputs either balanced transformer coupled via a D type connector or unbalanced via BNC connectors.

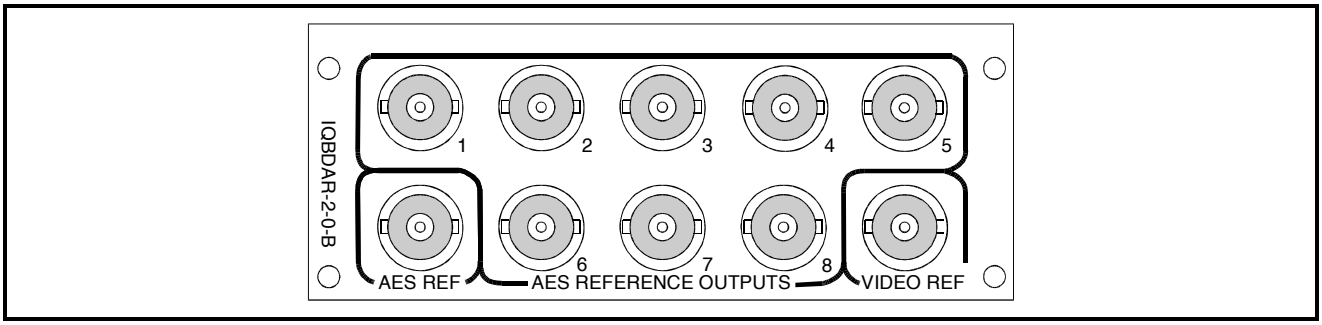
RollCall™ control provides full remote control and reporting of input conditions

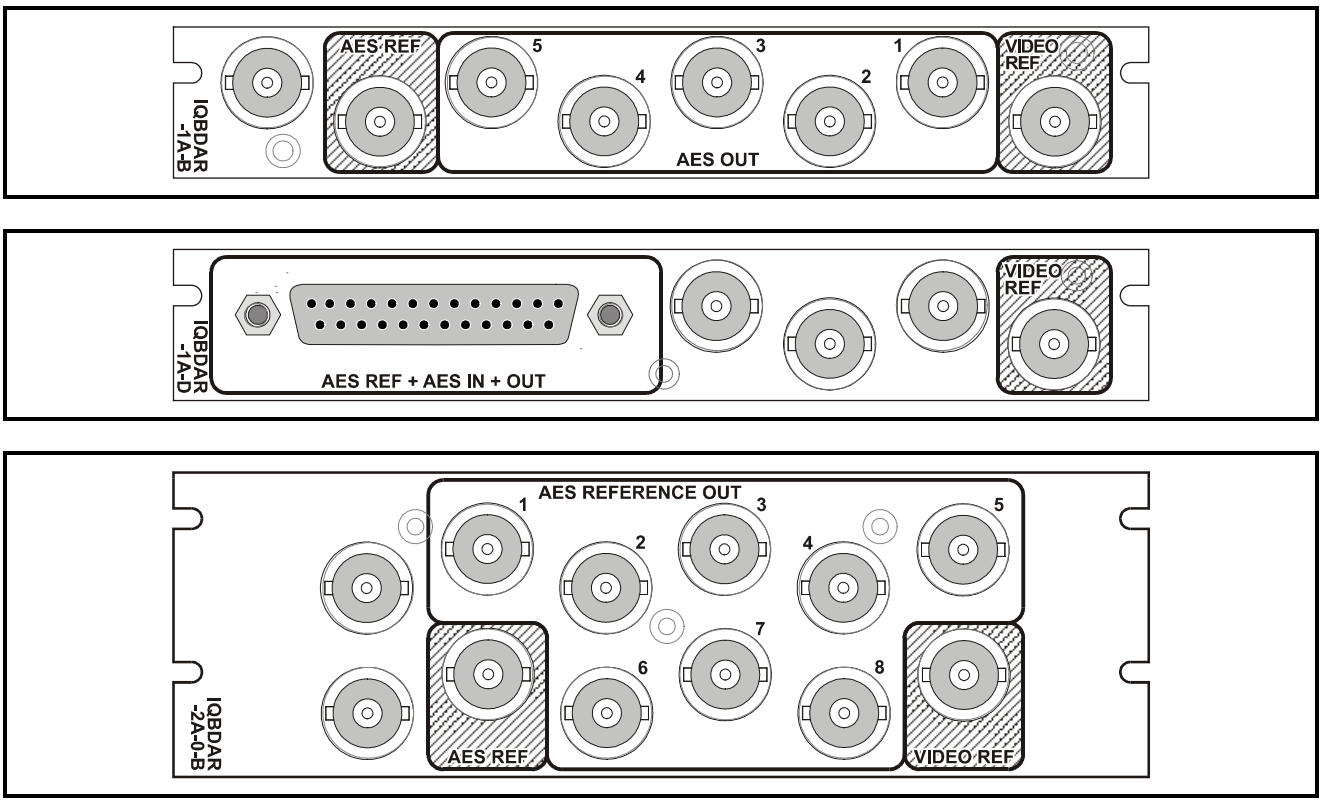
REAR PANEL VIEWS











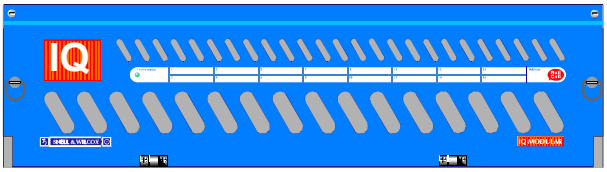
Versions of the module cards available are:

IQBDAR-1-0-D	7 Channel Pairs Balanced 25 way D connector	Single width module
IQBDAR-2-0-D	7 Channel Pairs Balanced 25 way D connector	Double width module
IQBDAR-1-S-D	7 Channel Pairs Balanced 25 way D connector	Single width module
IQBDAR-2-S-D	7 Channel Pairs Balanced 25 way D connector	Double width module
IQBDAR-1-0-B	8 Channel Pairs Unbalanced BNC connectors	Single width module
IQBDAR-2-0-B	8 Channel Pairs Unbalanced BNC connectors	Double width module
IQBDAR-1-S-B	8 Channel Pairs Unbalanced BNC connectors	Single width module
IQBDAR-2-S-B	8 Channel Pairs Unbalanced BNC connectors	Double width module
IQBDAR-1A-B	8 Channel Pairs Unbalanced BNC connectors	Single width module
IQBDAR-1A-D	7 Channel Pairs Balanced 25 way D connector	Single width module
IQBDAR-2A-0-B	8 Channel Pairs Unbalanced BNC connectors	Single 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

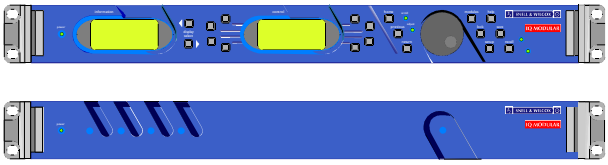
Rear panels ***with*** the suffix A may only be fitted into the 'A' style enclosure shown below.



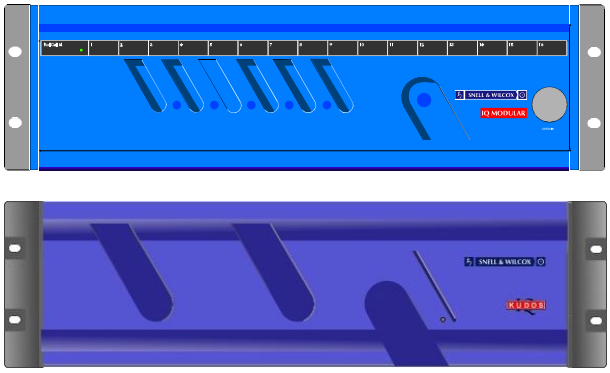
(Enclosure order codes IQH3A-E-O, IQH3A-E-P, IQH3A-N-O, IQH3A-N-P)

'O' Style Enclosures

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

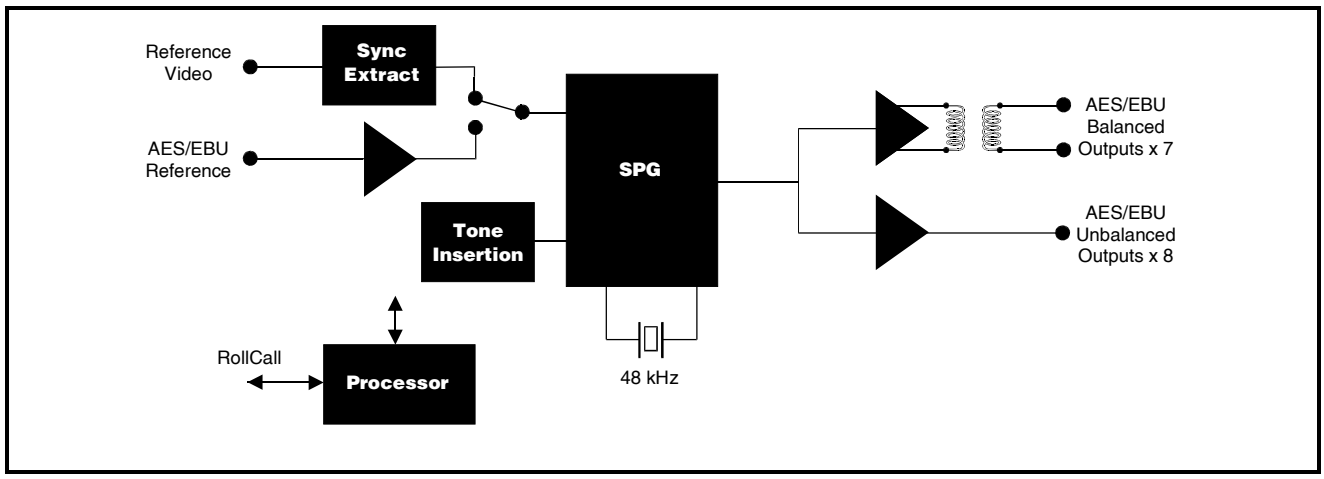


(Enclosure order codes IQH1S-RC-O, IQH1S-RC-AP, IQH1U-RC-O, IQH1U-RC-AP, Kudos Plus Products)



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

BLOCK DIAGRAM



Features

- 7 transformer-coupled balanced AES 48 kHz reference outputs
- Optional 8 transformerless unbalanced outputs
- Free-run or locking to video black or AES/EBU audio
- Grade 1 reference option
- Silence, pulse or various tones available, any combination assignable to either the left or right outputs
- Independent left and right tone level adjust, 0 to -20 dBFS
- AES reference can be received from up to 150 m of AES cable for balanced input or up to 500 m of RG59B cable for unbalanced input
- Automatic 525 or 625 line video input detection
- RollCall™ control
- Output channel status monitoring
- 20 or 24-bit sample word length, user selectable
- 4 memory locations for storage and recall of selected parameters

Technical Profile

Features

Signal Inputs

Digital Audio Reference ..... Balanced AES/EBU 48 kHz via 25-Way D-type(-D)
Unbalanced AES/EBU 48 kHz via BNC (-B)

Video Reference ..... 525/625 Black Burst Video via BNC

Standards AES3–1992

Signal Outputs

Digital Audio..... 7 x Channel Pairs Balanced AES/EBU 48 kHz via 25-Way D-type(-D)
8 x Channel Pairs Unbalanced AES/EBU 48 kHz via BNC (-B)

Standards AES3–1992

Card Edge Controls (also available via RollCall)

Lock Select ..... Free-run, Lock to Video, Lock to AES audio

Mono Frequency Select ..... 16 frequencies from 100 Hz to 21 kHz

Independent Left & Right Tone Style
Sinusoidal or 1.5 kHz pulse, 48 ms wide at 1 second intervals, or just digital silence

Mono Tone Level Adjust .... 0 dBFS to -20 dBFS ±0.3 dB in 1dB Steps

Sample Word Length ..... 20-bits or 24-bits, Auxiliary bits used for main audio

Functions Available via RollCall™ Only

Input Lock Detect ..... Detects presence of audio and video inputs

Channel Status Monitor..... Monitors Output Channel Status

Channel Status Editor ..... Origin and Destination editor

Left & Right Tone Level Adjust
0 dBFS to -20 dBFS ±0.3 dB in 1dB Steps

Left & Right Frequency Select
Full range of frequencies from 100 Hz to 22.5 kHz in 100 Hz steps

User Memories..... 4

Specification

Input Cable Length (-D)..... >150 m of AES3 cable Balanced 110 Ohms

Input Cable Length (-B)..... >500 m of RG59 cable Unbalanced 75 Ohms

Video Reference ..... Standard level ±6dB into 75 Ohms

Output Channel Pairs (-D).. 7 Balanced 3 Vpk to pk typ. into 110 Ohms

Output Channel Pairs (-B).. 8 Unbalanced 1 V typical into 75 Ohms

Free Run Stability ..... ±10ppm

Optional Grade 1 Crystal.... ±1ppm max w.r.t. nominal frequency at +25°C

AES Reference Input Frequency Pull-In Range
± 2 Hz @ 48 kHz

Locking ..... Conforms to AES11 1997 specification

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)

Power Consumption

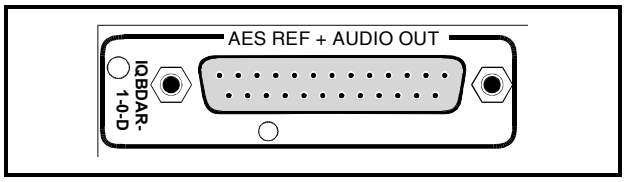
Module Power Consumption
2.9W max

INPUT AND OUTPUTS

-D Versions

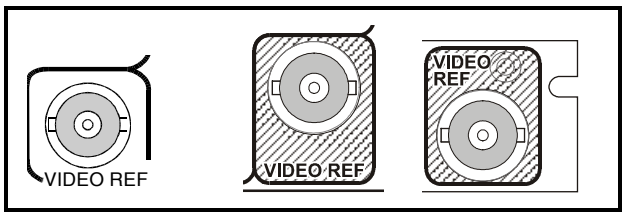
The AES reference input and audio output connections are made via this 25 way female D-type connector.

For connection data consult the tables on page 5.



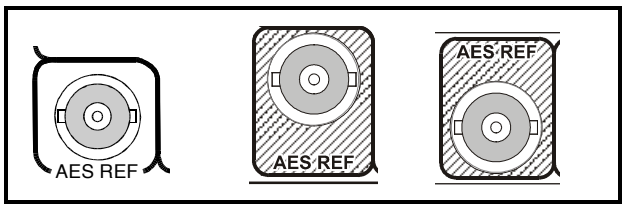
Video Ref (all Versions)

A black burst video reference signal may be connected to this BNC connector.



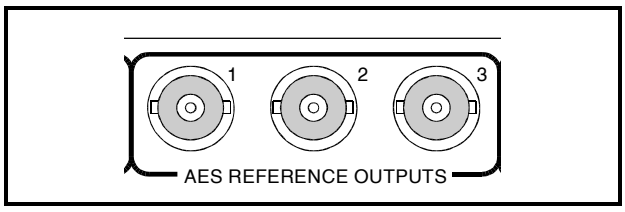
AES Ref (-B Versions)

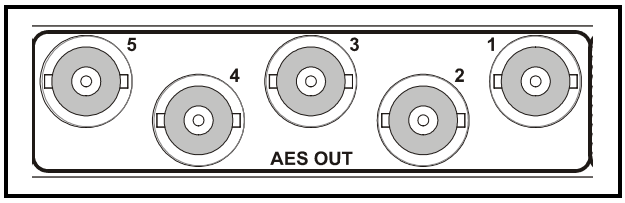
This BNC connector accepts an unbalanced AES input.

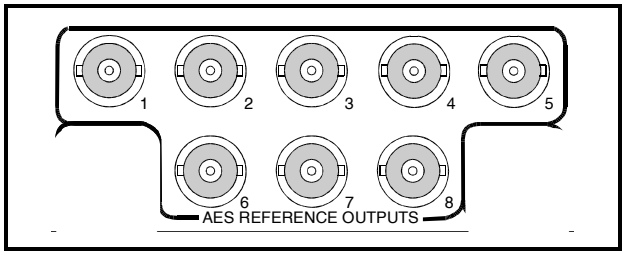


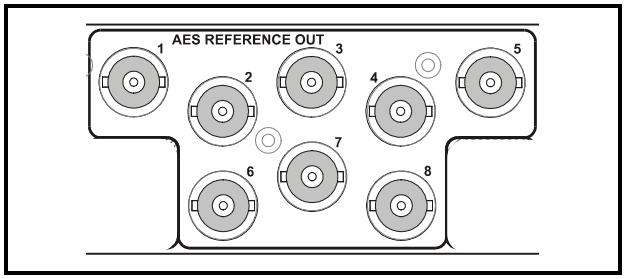
AES Outputs (all versions)

Three, five or eight unbalanced outputs are available from these BNC connectors.







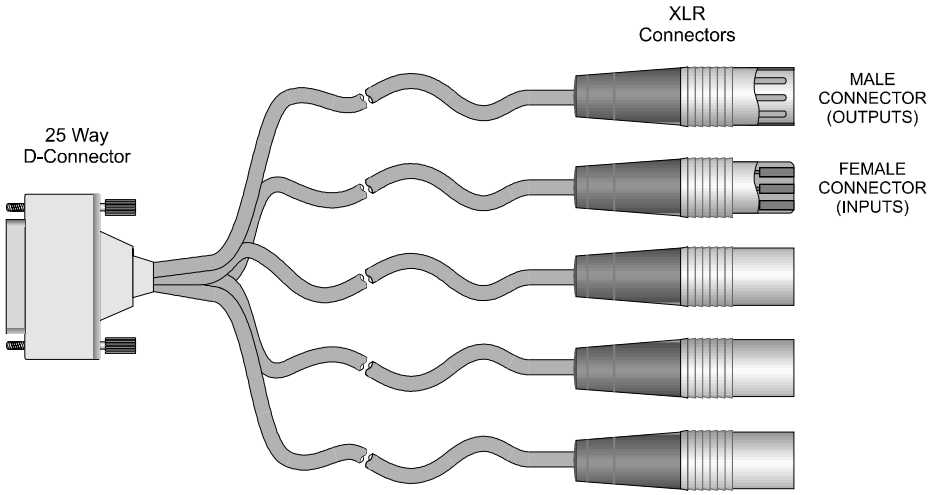


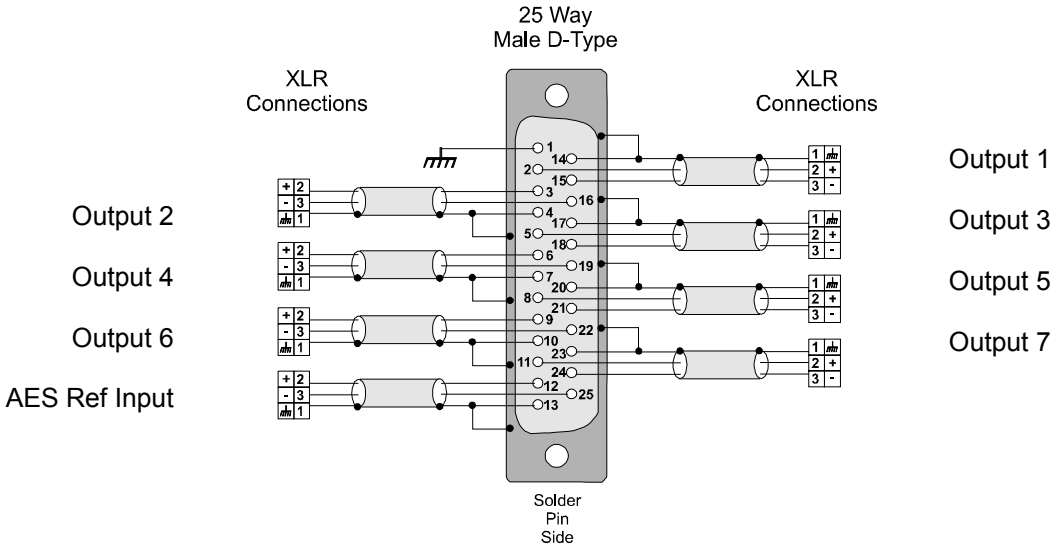
Connection Details

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

Note: When assembling cables connect pin 13 of the D-Type to pin 7 of the D-Type to ensure the signal ground and chassis ground are connected.

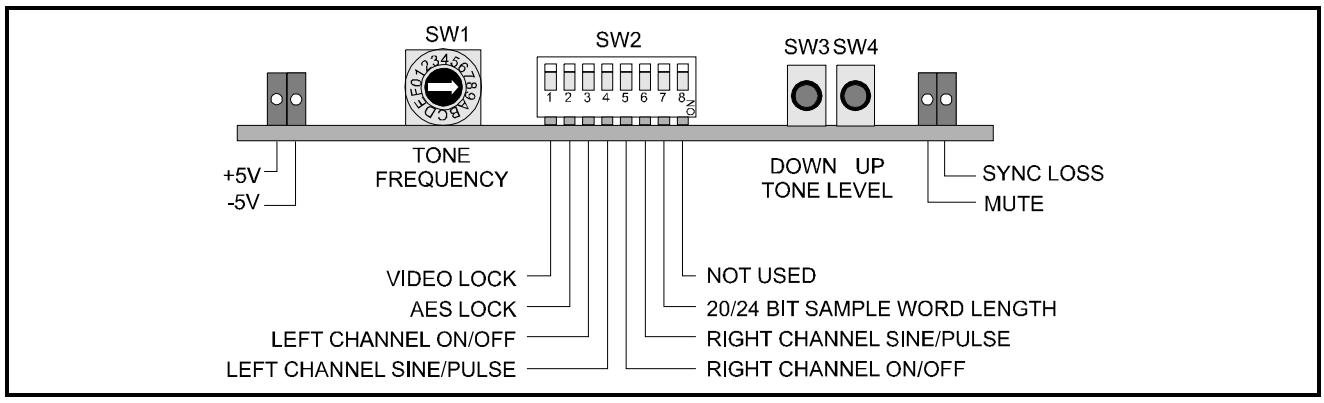
Connection Details to XLR Connectors





Note: When assembling cables connect pin 13 of the D-Type to pin 7 of the D-Type to ensure the signal ground and chassis ground are connected.

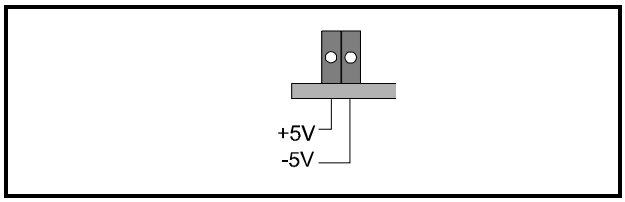
CARD EDGE CONTROLS

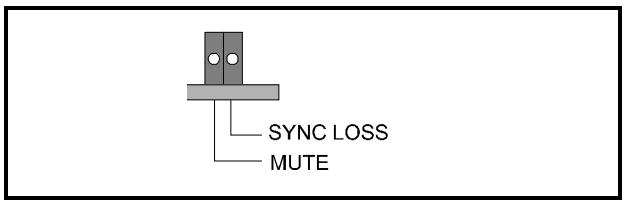


*Adjustment of the settings of the **IQBDAR** is available either via card edge controls and/or via a more comprehensive remote control system using RollCall™*

Note that the availability of some of the card edge controls will depend on the card version; see feature table for variations.

LED INDICATORS





Power +5V, -5V

These two indicators are illuminated when the positive and negative supplies are present.

Sync Loss

This indicator will be illuminated if the selected locking signal is lost.

Mute

This indicator will become illuminated when both channels are forced to produce silence as an output. This will occur when the following menu selections are made:

◄ **Generator** If this item is set to OFF

OR

◄ **Set Generator**

and the

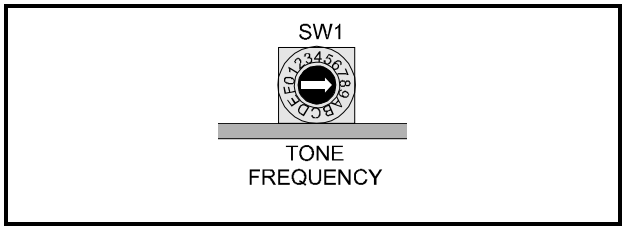
◄ **Setup Left/Right Tone** functions are set to ◄ **OFF** for both channels.

Note that SW2 positions 3 and 5 may also be used to turn the channels OFF.

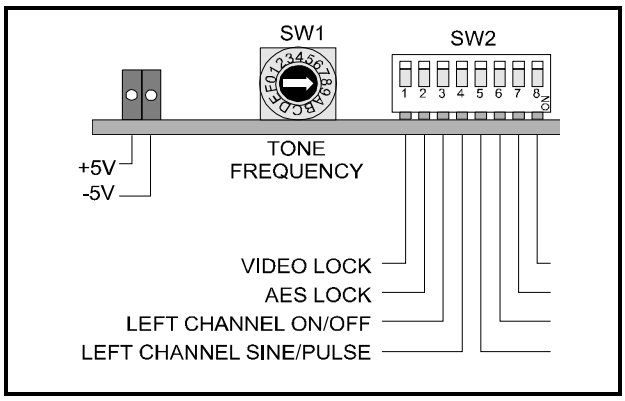
SW1 Tone Frequency

This Hex switch allows the tone frequency to be set. (Mono frequency select)

Position	Frequency	Position	Frequency
0	100 Hz	8	10500 Hz
1	1000 Hz	9	12000 Hz
2	1500 Hz	A	13500 Hz
3	3000 Hz	B	15000 Hz
4	4500 Hz	C	16500 Hz
5	6000 Hz	D	18000 Hz
6	7500 Hz	E	19500 Hz
7	9000 Hz	F	21000 Hz



SW2 Functions
(Up = OFF, Down = ON)



Position 1 Video Reference Lock

This allows the unit to lock to the Video Reference signal by setting to the ON (down) position.
(See appendix A)
*When **both** positions 1 and 2 are set to OFF (up) or ON (down) position the function will be in the FREERUN mode and the unit will not be locked to either the Video Reference signal or the AES reference signal.*

Position 2 AES Reference Lock

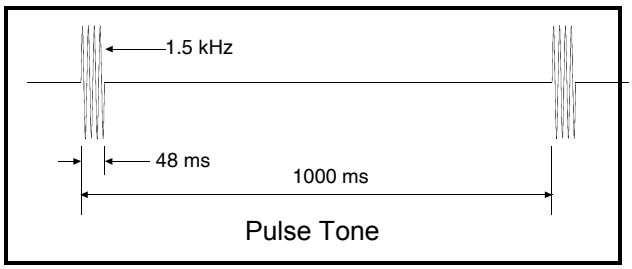
This allows the unit to lock to the AES Reference signal by setting to the ON (down) position.
(See appendix A)

Position 3

This switches the left channel ON or OFF.

Position 4

This switches the left channel to either a continuous Sine wave tone (ON) or a pulsed Sine wave tone (OFF) when the left channel is enabled using SW2 position 3.

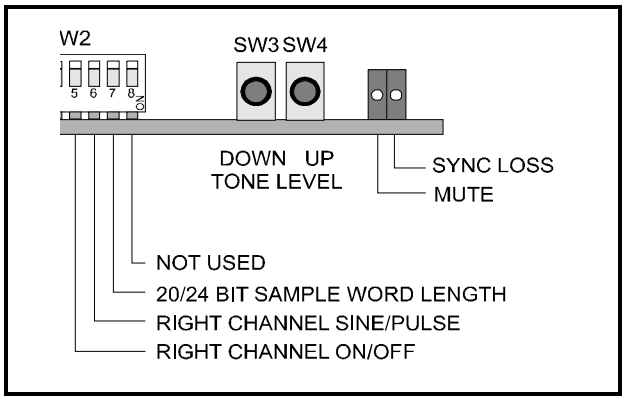


Position 5

This switches the right channel ON or OFF.

Position 6

This switches the right channel to either a continuous Sine wave tone (ON) or a pulsed Sine wave tone (OFF) when the right channel is enabled using SW2 position 5.



Position 7

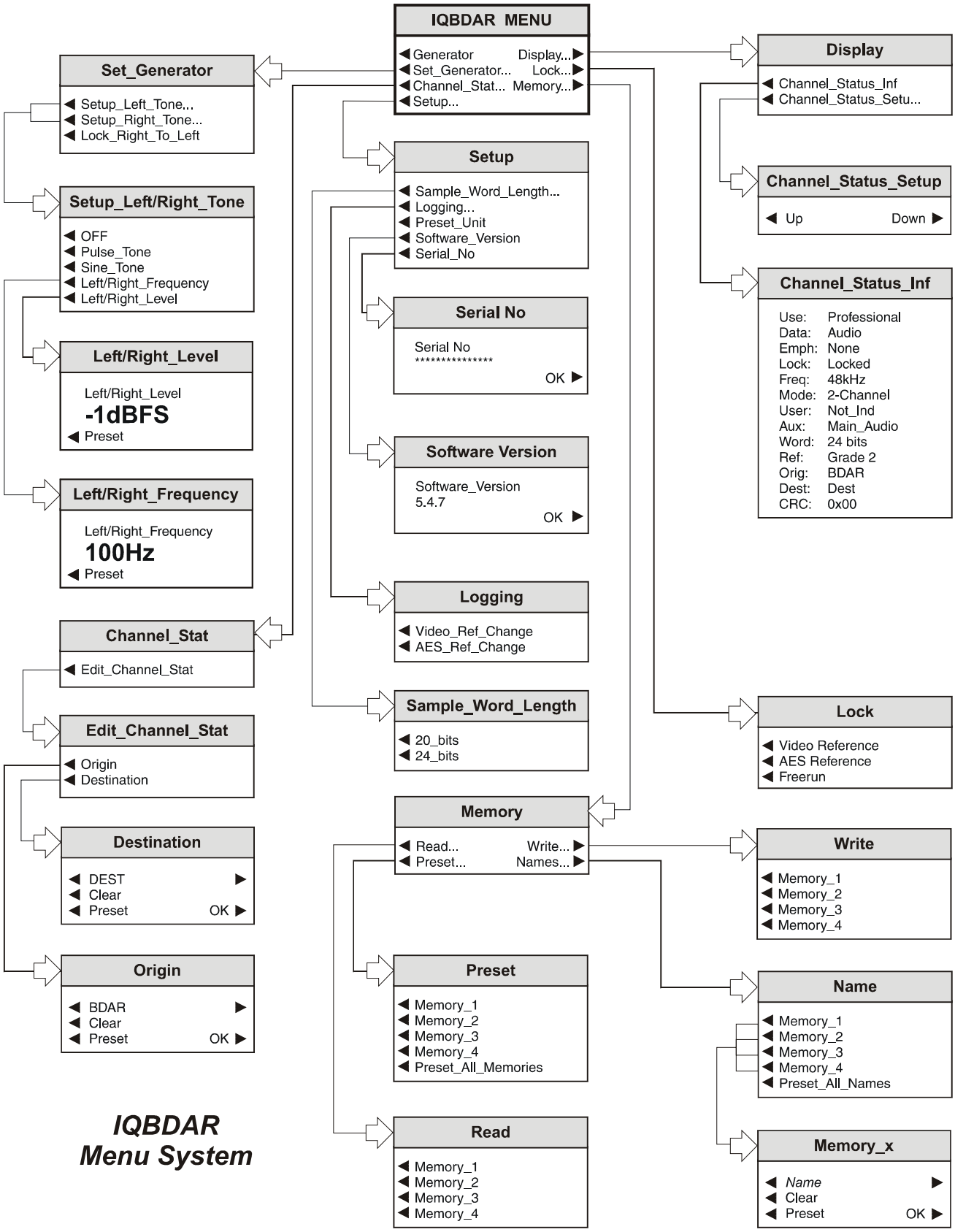
This position allows the sample word length to be set to either 20-bit (OFF) or 24-bit (ON)

Position 8

This position is not used.

SW3 and SW4

These push buttons allow the level of the output tone to be adjusted. Pushing SW3 decreases the level and SW4 increases the level. Overall range is from 0 dBFS to –20 dBFS in steps of 1 dB.
To reset the level to 0 dBFS both buttons should be pressed together.



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

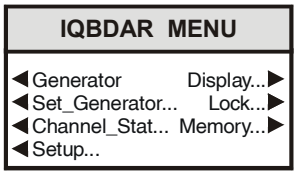
MENU DETAILS
(See IQBDAR Menu System Drawing)

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.



◄ Generator

When enabled the generator will turn ON and all present generator settings will activated.

Display ►

Display
◀ Channel_Status_Inf ◀ Channel_Status_Setu...

This item allows information about the signals and channel status to be seen.

```
REF:OFF    STD:INT
L:100Hz 0dBFS
R:100Hz 0dBFS
```

This display will show the characteristics of the input signal, the state of the reference, the video standard and the locking mode.

Line 1 Details

The first item of line 1 shows the type of locking reference signal in use. The following abbreviations may be displayed:

Ref:OK Std:625

External selected Reference "OK", and locked to 625 Video

Ref:OK Std:525

External selected Reference "OK", and locked to 525 Video

Ref:OK Std:AES

External selected Reference "OK", and locked to AES

Ref:Error Std:INT

External selected Reference "Error", and free running

Ref:Off Std:INT

No genlock as freerun has been selected.

AES The unit is locked to an AES signal.
VID The unit is locked to a video signal.
INT The unit is locked to an internally generated signal.

The second item of line 1, **, will show the lock status of the unit. The following abbreviations may be displayed:

OK The genlock function is OK.
** Indicates a genlocking error.

The third item of line 1, **STD:****, will show the video reference standard. The following abbreviations may be displayed:

AES The input reference is AES
625 The input reference standard is 625.
525 The input reference standard is 525.
INT The internal reference is in use.

Line 2 and 3 Details

The first item of line 2, **L**, indicates the Left output channel.

The second item of line 2, **100Hz** will show the frequency of the output signal. This item could also be Mute.

The third item of line 2, **OdBFS** will show the level of the output signal in dBFS.

The third line provides similar information for the Right output channel.

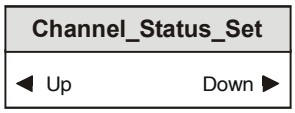
◄ Channel_Status_Inf

Selecting this item will display information about the channel status that is being embedded into the AES stream. Examples are shown below:

Use: Professional
Data: Audio
Emph: None
Lock: Locked/Unlocked
*Note that if an AES or video reference is not available **Unlocked** will be indicated.*
Freq: 48kHz
Mode: 2-Channel
User: Not Ind
Aux: Not Ind/Main Audio
Word: 24bits/20 bits
*Note that if the sample word length is set to 20 bits **Aux** will be **Not Ind** and **Word** will be **20 bits;** if the sample word length is set to 24 bits **Aux** will be **Main Audio** and **Word** will be **24 bits***
Ref: Grade 2/Grade 1
Note that default is to Grade 2. If a high stability crystal is fitted Grade 1 will be selected automatically.
Orig: BDAR
Dest: Dest
CRC: 0x00

◄ Channel_Status_Setup

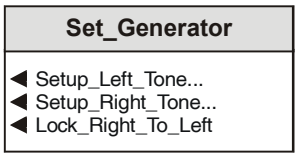
Selecting this window will reveal a sub-menu that will allow the channel status information for the output to be viewed.



Note that the Up and Down push buttons selections should be used for this function as the spinwheel will not be operational.

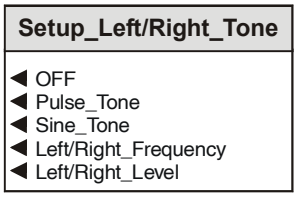
◄ Set Generator

This item allows the characteristics of the generated output signal to be set.



◄ Setup_Left/Right_Tone

Settings for the tone output of the left and right channels may be chosen with this sub-menu.



◄ OFF

The output signal will be silence

◄ Pulse Tone

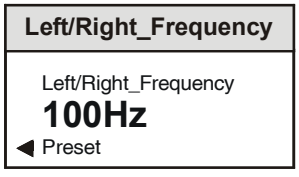
The output signal will be a burst of Sine waves at 1.5 kHz, repeated at 1-second intervals. Output level will be as set by the Tone Level function.
Note that the frequency, duration and repetition rate cannot be adjusted.

◄ Sine Tone

The output signal will be a continuous Sine wave. Output level will be as set by the *Left/Right level* function and frequency as set by the *Left/Right Frequency* function.

◄ Left/Right Frequency

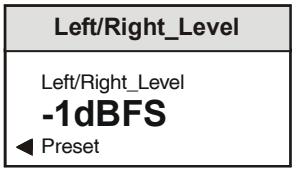
The frequency of the tone signal may be adjusted with this function.



Adjust range is from 100 Hz to 22,500 Hz in 100 Hz steps.
Preset value is 100 Hz.

◄ Left/Right level

The level of the tone signal may be adjusted with this function.



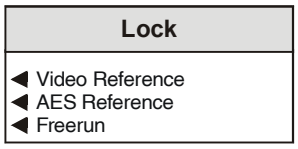
Adjustment range is from 0 dBFS to –20 dBFS in steps of 1 dB. Preset value is 0 dBFS.

◄ Lock_Right_To_Left

When this item is selected the right and left channels will be locked together and both channels will have the tone frequency, level and generator mode values assigned to the **left** channel. When deselected the values will return to the separate settings.

Lock ►

This selection reveals a sub-menu that allows the standard and mode of the locking source to be set.



◄ Video Reference

The unit will lock to the external video reference signal via Video Ref BNC input. (See appendix A)

◄ AES Reference

The unit will lock to the AES reference signal via the D connector or AES Ref BNC.
(See appendix A)

◄ Freerun

The unit will freerun and will not be locked to any external signal.

Note that if the selected (Video or AES Reference) locking signal is lost the unit will revert to the Freerun mode; when the same signal returns the unit will revert to locking to that signal.

◄ Channel Stat

When the Edit_ChannelStat function is enabled this item allows channel status information of the origin or the destination to be changed/edited.

Channel_Stat
◄ Edit_Channel_Stat

◄ Edit_Channel_Stat

◄ Origin

Origin	
◄ BDAR	►
◄ Clear	
◄ Preset	OK ►

This allows the originating channel status information to be changed.

The text may be edited by using the push buttons to select the position in the text and the spinwheel to select the new text character.
Select ◄ OK to save the text, ◄ Clear to clear the text or ◄ Preset to return to the default (BDAR) text.

◄ Destination

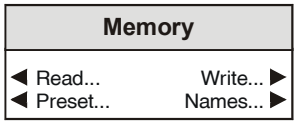
This allows the destination channel status information to be changed.

Destination	
◄ DEST	►
◄ Clear	
◄ Preset	OK ►

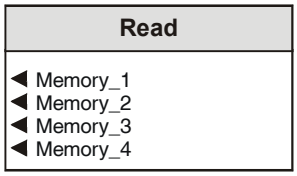
The text may be edited by using the push buttons to select the position in the text and the spinwheel to select the new text character.
Select ◄ OK to save the text, ◄ Clear to clear the text or ◄ Preset to return to the default (DEST) text.

Memory ►

All settings of the unit may be stored in any of 4 non-volatile memory locations. These locations may be read, saved (write), given a name or cleared to the preset names by selecting this function and the sub-menus.

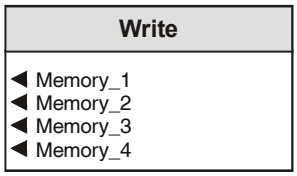


◄ Read



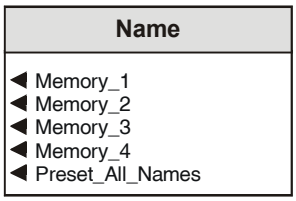
This will reveal a list of 4 memory locations. When a particular location is enabled, settings will be changed to the values contained in that memory location.

◄ Write

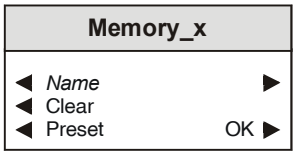


This will reveal a list of 4 memory locations. When a particular location is enabled, current settings will be saved in that memory location.

◄ Name

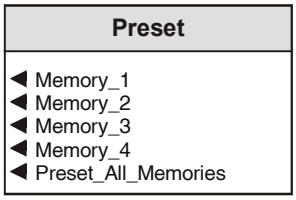


This will reveal a list of the 4 memory locations that may be given a specific name.



Use the adjacent buttons to select the cursor position and the spinwheel to select the alphanumeric character.
Preset_All_Names will return all names to their preset names.

◄ Preset

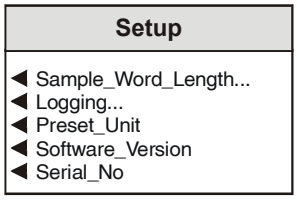


This will reveal a list of 4 memory locations. When a particular location is enabled, the preset values of that memory location will be loaded. Preset_All_Memories will return all memory locations to their preset values.

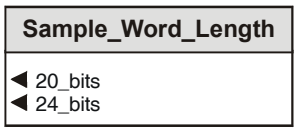
Note that memory names will not be changed.

◄ Setup

This function allows various items to be set up.

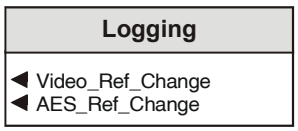


◄ Sample Word Length



The sample word length may be set to either 20 bits or 24 bits.
Preset is to 24 bits.

◄ 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 parameters that may be selected for logging are as follows:

◄ Video_Ref_Change
◄ AES_Ref_Change

If both logging items are selected four logging fields are activated:

1. **AESREF=(OK, LOST)**
2. **VIDREF=(OK, LOST)**
3. **EXTREF=(OK, ERROR, OFF)**
4. **STD=(625, 525, AES, INT)**

Both **AESREF** and **VIDREF** give logging information whenever the input has changed; this is particularly advantageous for RollMap.

The logging field **EXTREF** gives logging information whenever the selected reference changes, or whenever a user changes the selected locking mode. This item also mirrors the data in the information display window.

The logging field STD logs the reference standard in use i.e. 625 0r 525 for video references, AES for AES references and INT for internal.

Note that the unit will default to internal reference if the chosen external reference is missing or is in error.

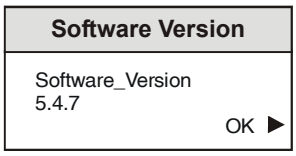
If for example, only **Video Reference Change** logging was selected, then **VIDREF** and **EXTREF** and **STD** logging fields will be enabled.
If only **AES Reference Change** logging is selected, then **AESREF** and **EXTREF** and **STD** will be enabled.

If none are selected then no logging fields are enabled.

◄ Preset Unit

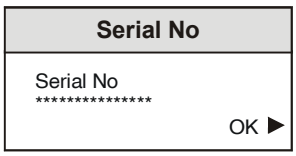
When enabled all adjustable settings will be returned to their preset (default) values.

◄ 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_No



Selecting this item reveals a display showing the serial number of the module.

Select OK to return to the System Menu

RollCall Templates for the IQBDAR

Generator

This item allows various adjustments to be made to the generator setup.

Enable Generator

When selected the generator will turn ON and all present generator settings will activated.

Lock Right To Left

When this item is selected the right and left channels will be locked together and both channels will have the tone frequency, level and generator mode values assigned to the **left** channel. When deselected the values will return to the separate settings.

Left (Right) Frequency

The frequency of the Sine Tone signal may be adjusted with this function. Adjust range is from 100 Hz to 22,500 Hz in 100 Hz steps.
Preset value is 100 Hz.

Left (Right) Level

Adjustment range is from 0 dBFS to –20 dBFS in steps of 1 dB. Preset value is 0 dBFS.

Left (Right) Generator Mode

Settings for the Left and Right channels may be set with this item.

Off

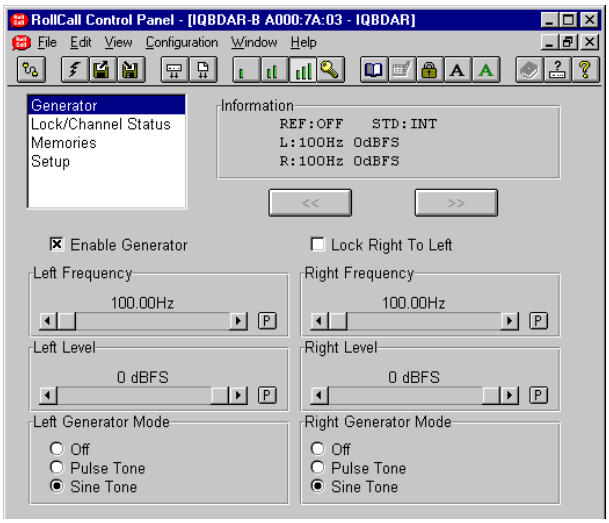
The output signal will be silence

Pulse Tone

The output signal will be a burst of Sine waves at 1.5 kHz, repeated at 1-second intervals. Output level will be as set by the Tone Level function. *Note that the frequency, duration and repetition rate cannot be adjusted.*

Sine Tone

The output signal will be a continuous Sine wave. Output level will be as set by the *Left/Right Level* function and frequency as set by the *left/Right Frequency* function.



Note that for this and other screens the following applies:

The P 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.

Lock/Channel Status

This item allows the channel status to be displayed and the locking mode to be selected.

Channel Status

This allows the channel status information to be displayed and changed.

Show Channel Status Info

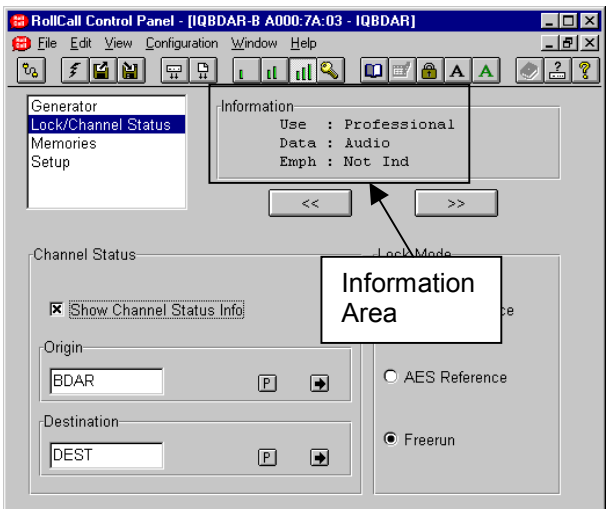
This item will display information in the Information area about the channel status that is being embedded into the AES stream.

When this item is enabled the forward >> and reverse << scroll buttons will be available for selection. *Note that these buttons are available on all screens.*

These buttons will allow the channel status information to be scrolled through and shown in the information window.

Examples are shown below:

Use: Professional
Data: Audio
Emph: None
Lock: Locked/Unlocked
*Note that if an AES or video reference is not available **Unlocked** will be indicated.*
Freq: 48kHz
Mode: 2-Channel
User: Not Ind
Aux: Not Ind/Main Audio
Word: 24bits/20 bits
*Note that if the sample word length is set to 20 bits **Aux** will be **Not Ind** and **Word** will be **20 bits;** if the sample word length is set to 24 bits **Aux** will be **Main Audio** and **Word** will be **24 bits***
Ref: Grade 2/Grade 1
Note that default is to Grade 2. If a high stability crystal is fitted Grade 1 will be selected automatically.
Orig: BDAR
Dest: Dest
CRC: 0x00



Lock/Channel Status (continued)

When the Show Channel Status Info item is not selected the information area will show the characteristics of the input signal, the state of the reference, the video standard and the locking mode.

Line 1 Details

The first item of line 1 shows the type of locking reference signal in use. The following abbreviations may be displayed:

Ref:OK Std:625

External selected Reference "OK", and locked to 625 Video

Ref:OK Std:525

External selected Reference "OK", and locked to 525 Video

Ref:OK Std:AES

External selected Reference "OK", and locked to AES

Ref:Error Std:INT

External selected Reference "Error", and free running

Ref:Off Std:INT

No genlock as freerun has been selected.

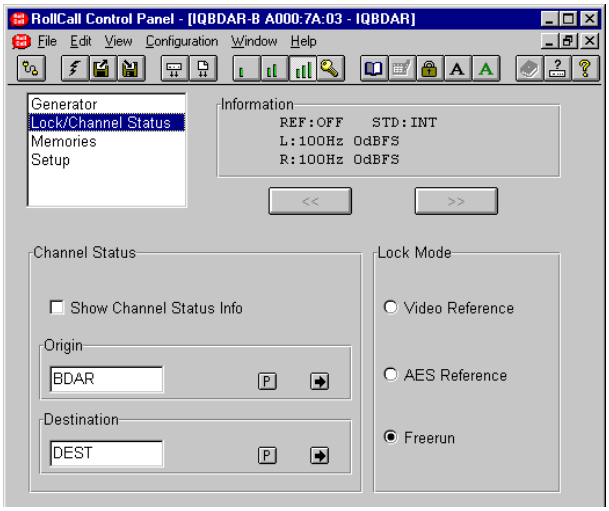
AES	The unit is locked to an AES signal.
VID	The unit is locked to a video signal.
INT	The unit is locked to an internally generated signal.

The second item of line 1, **, will show the lock status of the unit. The following abbreviations may be displayed:

OK	The genlock function is OK.
**	Indicates a genlocking error.

The third item of line 1, **STD:****, will show the video reference standard. The following abbreviations may be displayed:

AES	The input reference is AES
625	The input reference standard is 625.
525	The input reference standard is 525.
INT	The internal reference is in use.



Line 2 and 3 Details

The first item of line 2, **L**, indicates the Left output channel.

The second item of line 2, **100Hz** will show the frequency of the output signal. This item could also be Mute.

The third item of line 2, **OdBFS** will show the level of the output signal in dBFS.

The third line provides similar information for the Right output channel.

Origin

This allows the originating channel name to be changed.

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

Selecting Preset P will return the text to the default name.

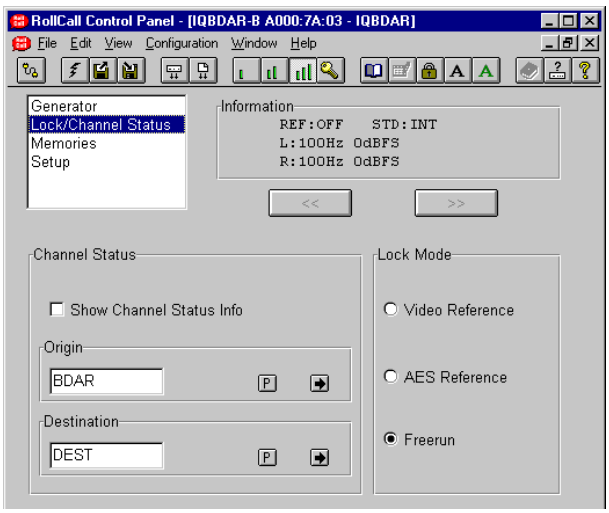
Destination

This allows the destination name to be changed.

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

Selecting Preset P will return the text to the default name.

Lock/Channel Status (continued)



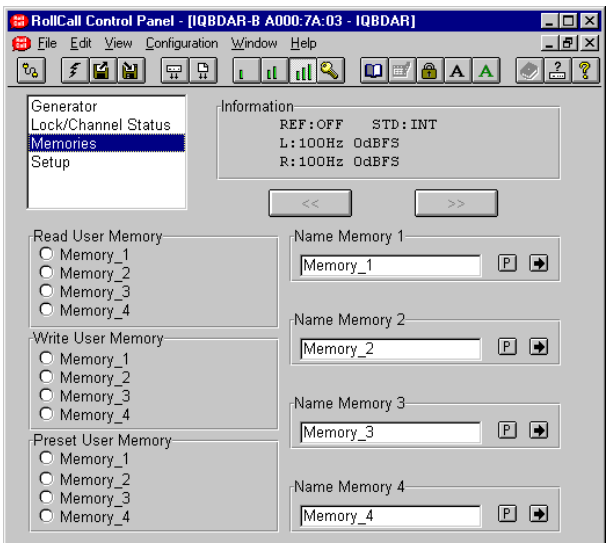
Lock Mode

This allows the locking source to be selected.

External Video	Unit will lock to external Video (via Video Ref BNC input) (See appendix A)
AES Audio	Unit will lock to the AES Reference (via D connector or AES Ref BNC) (See appendix A)
Freerun	The unit will freerun and will not be locked to any external signal.

Note that if the selected (Video or AES) locking signal is lost the unit will revert to the freerun mode; when the same signal returns the unit will revert to locking to that signal.

Memories



All settings of the unit may be stored in any of 4 non-volatile memory locations.

These locations may be read, saved (write), given a name or cleared to the preset names with this function.

Read User Memory (Recall)

When a particular location is enabled, settings will be changed to the values contained in that memory location.

Write User Memory (Save)

When a particular location is enabled, current settings will be saved in that memory location.

Preset User Memory

When a particular location is enabled, the preset values of that memory location will be loaded.

Name Memory (1, 2, 3, and 4)

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

Selecting Preset P will return the text to the default name.

Setup

This function allows various items to be set up.

Preset Unit

When enabled all adjustable settings will be returned to their preset (default) values.

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.

The parameters that may be selected for logging are as follows:

AES Reference Change
Video Reference Change

If both logging boxes are selected four logging fields are activated:

1. **AESREF=(OK, LOST)**
2. **VIDREF=(OK, LOST)**
3. **EXTREF=(OK, ERROR, OFF)**
4. **STD=(625, 525, AES, INT)**

Both **AESREF** and **VIDREF** give logging information whenever the input has changed; this is particularly advantageous for RollMap.

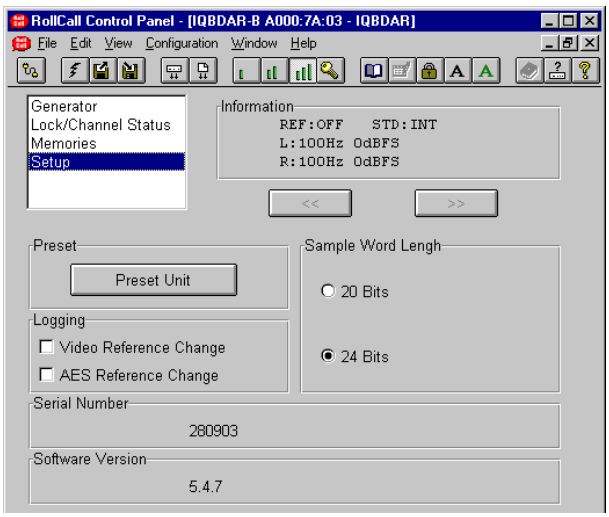
The logging field **EXTREF** gives logging information whenever the selected reference changes, or whenever a user changes the selected locking mode. This item also mirrors the data in the information display window.

The logging field STD logs the reference standard in use i.e. 625 0r 525 for video references, AES for AES references and INT for internal.

Note that the unit will default to internal reference if the chosen external reference is missing or is in error.

If for example, only **Video Reference Change** logging was selected, then **VIDREF** and **EXTREF** and **STD** logging fields will be enabled.
If only **AES Reference Change** logging is selected, then **AESREF** and **EXTREF** and **STD** will be enabled.

If none are selected then no logging fields are enabled.



Sample Word Length

The sample word length may be set to either 20 bits or 24 bits with this function.

Preset is to 24 bits.

Serial Number

This item shows the serial number of the module.

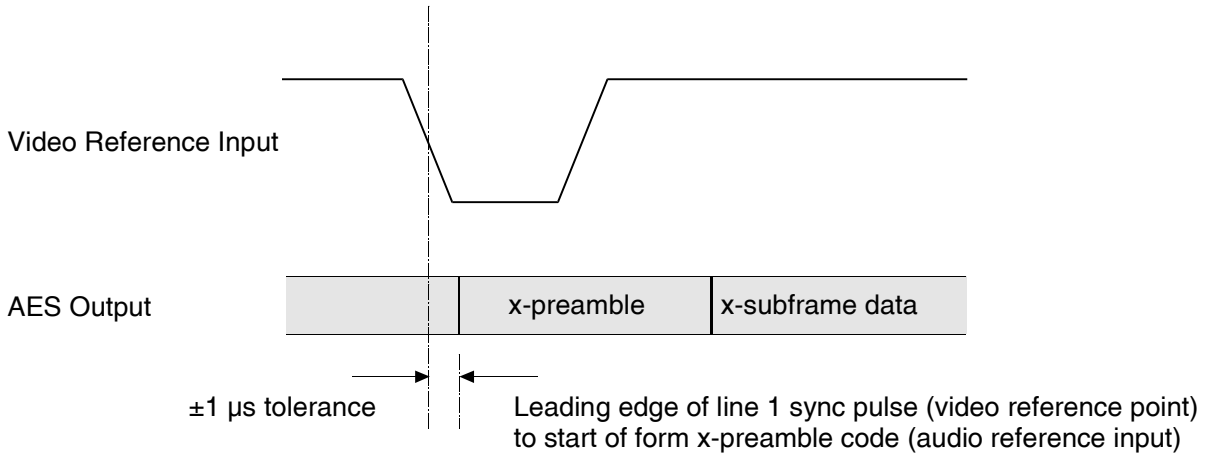
Software Version

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

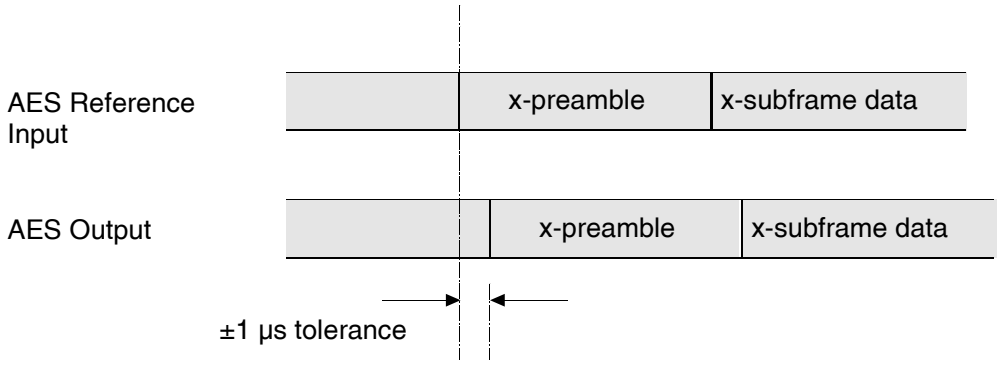
Appendix A

Relative Phase of Video and AES Digital Audio (Sampled at 48 kHz)

When locking to video there is a relationship between the start of the form x-preamble code of the frame of the 48 kHz AES Reference signal and the start of line 1 for 625-line/50Hz or every 5th line 1 for 525-line/59.94Hz of the corresponding video reference signal. The fixed relationship avoids the possibility that an AES signal originating at a video synchronised DVTR in a synchronous environment will arrive at its destination at some critical phase such that allowable amounts of jitter cause samples to be dropped and/or repeated.



When locking to an AES Digital Audio Reference the outgoing signal will be frame aligned to the reference signal (see below)



Manual Revision Record

Date	Version No.	Issue No.	Change	Comments
310798	1	1		First Issue
280302	1	2	Now includes information for the 3A enclosure modules	New manual issued
030702	1	3	Page 10 Position 1 & 2 data corrected	New manual issued
040902	1	4	-2A rear panel added and corrections	New manual issued
020403	1	5	Power consumption added to techspec	New manual issued