

IQBDA3S Analog Audio Distribution Amplifier



Module Description

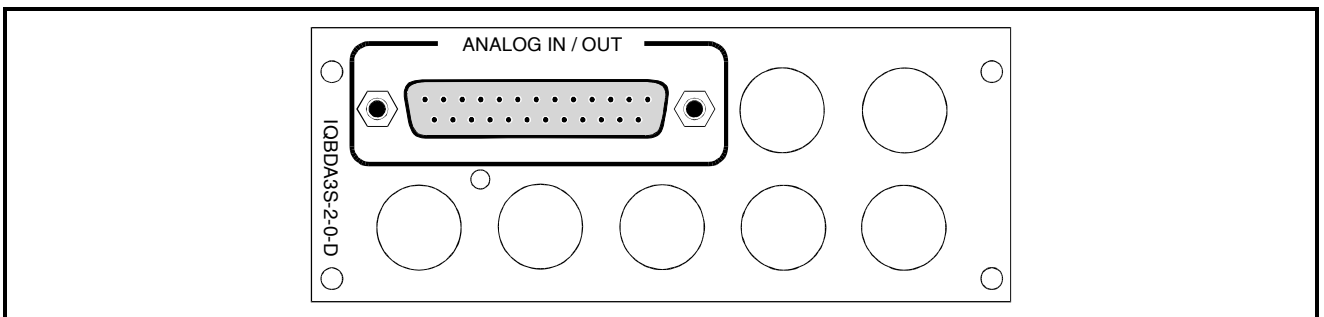
The IQBDA3S(-R) Analogue Audio Distribution Amplifier has dual balanced inputs with three balanced outputs per input.

All modules are available in RollCall (-R) and non-RollCall versions. The RollCall versions use an electronic gain control of between -24 dB and +30 dB in 0.5 dB steps, which is also available

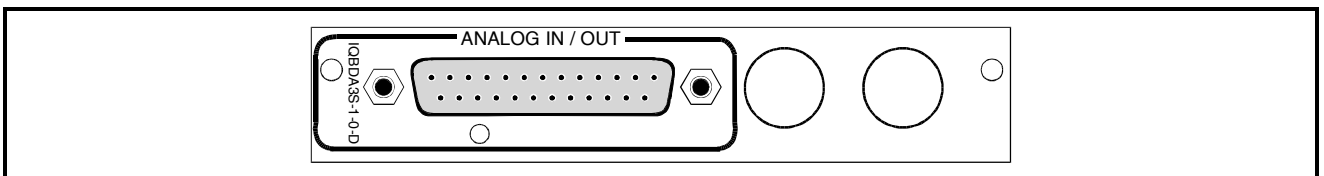
from the front panel. The non-RollCall versions gain is adjustable between -6 dB and 24 dB in 6 dB steps using jumper links, and also incorporates a fine gain adjust of -6 dB to +6 dB using a potentiometer. In both cases the maximum signal in or out (headroom) is 24 dBu.

The balanced transformerless analog audio connections are via a 25D connector

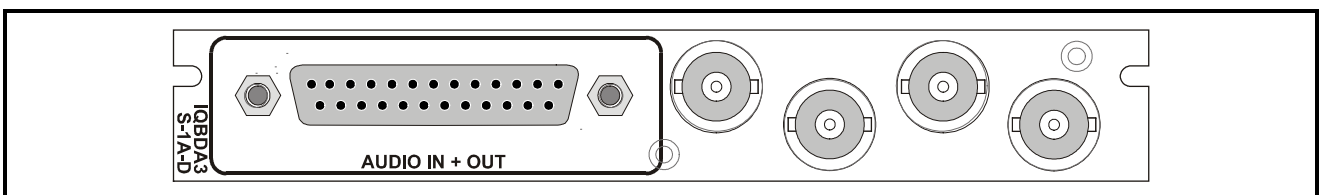
REAR PANEL VIEWS



IQBDA3S-2-0-D and IQBDA3S-2-R-D



IQBDA3S-1-0-D and IQBDA3S-1-R-D



IQBDA3S-1A-0-D and IQBDA3S-1A-R-D

Versions of the module cards available are:

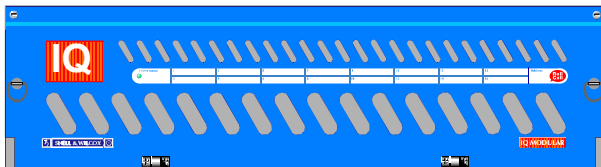
Module	Inputs	Outputs	RollCall	Gain Control	Width
IQBDA3S-1-0-D	2	3 + 3	No	Links + Potentiometer	Single
IQBDA3S-1A-0-D	2	3 + 3	No	Links + Potentiometer	Single
IQBDA3S-2-0-D	2	3 + 3	No	Links + Potentiometer	Double
IQBDA3S-1-R-D	2	3 + 3	Yes	Electronic + Rotary Switches	Single
IQBDA3S-1A-R-D	2	3 + 3	Yes	Electronic + Rotary Switches	Single
IQBDA3S-2-R-D	2	3 + 3	Yes	Electronic + Rotary Switches	Double

Module	Maximum Number of Modules per 3U rack when all outputs are at 24dBu and terminated with 600 Ohms	Width
IQBDA3S-1-0-D	12	Single
IQBDA3S-2-0-D	8	Double
IQBDA3S-1-R-D	12	Single
IQBDA3S-2-R-D	8	Double

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

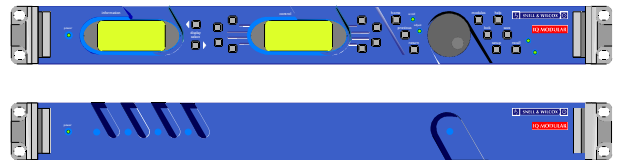
Rear panels **with** the suffix A may only be fitted into the ‘A’ style enclosure shown below.



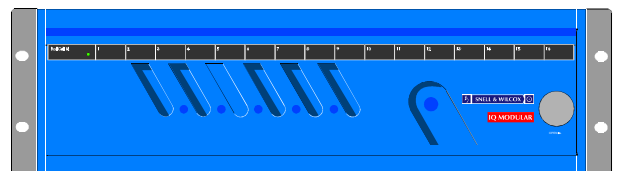
(Enclosure order codes IQH3A-E-0, IQH3A-E-P, IQH3A-0-0, IQH3A-0-P)

‘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)

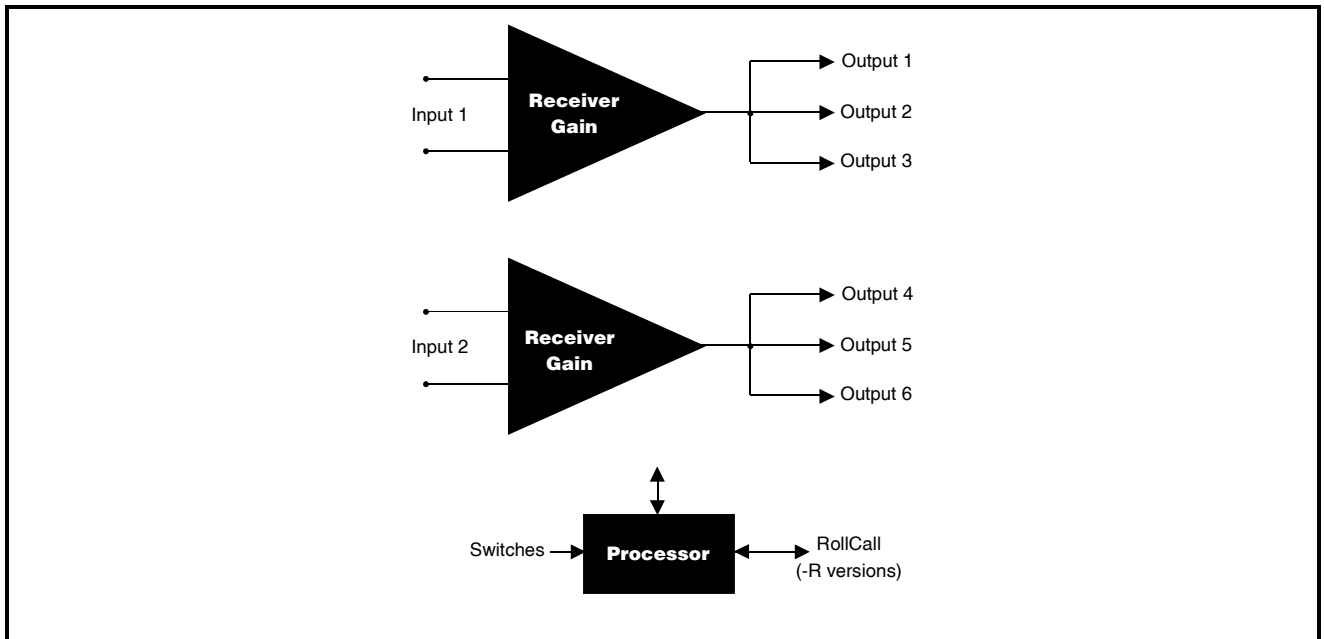


(Enclosure order codes IQH3N-0, IQH3N-P)



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

BLOCK DIAGRAM

**Features**

- Accepts two analog audio inputs
- Three outputs per input
- Output gain adjustable from -6 dB to +24 dB by links (IQBDA3S)
- Additional -6 dB to +6 dB gain by pot (IQBDA3S)
- Output gain adjustable from -24 dB to +30 dB (IQBDA3S-R)
- +24 dBu headroom
- Very low THD+N

TECHNICAL PROFILE

Features

Signal Inputs

Analog 2 channels balanced via D type connector

Signal Outputs

Analog 3 per channel balanced via D type connector

Indicators

Silence L and Right..... <=20 dBu for 40 seconds

Card Edge Controls (also available via RollCall - R version only)

Gain (Separate L and R) (-0 version)
 -6 dB to 24 dB in 6 dB steps (jumper links).
 -6 dB to +6 dB variable control

Specifications

Analog Input/Output Level... Headroom set to:
 24 dBu (17.5 V pk to pk) Gain at Unity

Analog Input Impedance 10 k ohms

Analog Output Impedance . <50 ohms

Total Harmonic Distortion + Noise
 Less than 0.005% at 700 Hz, 24 dBu in and 0 dB gain

Noise Floor (-0 version)..... Better than -119 dBFS 0 dB gain (20 Hz to 20 kHz)

Noise Floor (-R version) Better than -105 dBFS 0 dB gain (20 Hz to 20 kHz)

Stereo Amplitude Matching (-0 version)
 Better than ±0.1 dB L to R any gain

Stereo Amplitude Matching (-R version)
 Better than ±0.2 dB L to R any gain

Gain Accuracy L or R..... Better than ±0.2 dB w.r.t. 0 dB

Common Mode Rejection... Better than -60 dB (20 Hz to 20 kHz)

Frequency Flatness Better than +0.1 dBu to -0.3 dBu (20 Hz to 20 kHz with reference to 1 kHz)

Headroom (in and out) 24 dBu

Power Consumption

Module Power Consumption
 8.1 W max (-R versions)
 7.7 W max (-0 versions)

Gain (Separate L and R) (-R version)
 24 dB, -18 dB, -12 dB, -6 dB, 0 dB, +6 dB, +12 dB, +18 dB, +24 dB, +30 dB via card edge rotary switches.

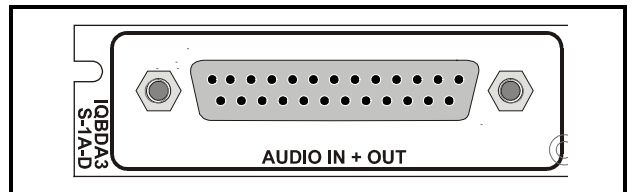
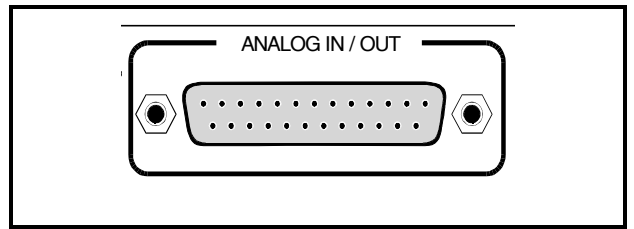
Functions Available via RollCall™ Only (- R version only)

Gain (Separate L and R) -24 dB to +30 dB in 0.5 dB steps

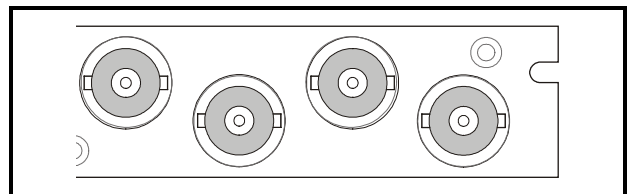
INPUTS AND OUTPUTS

All analog input and output connections are made via this 25 way female D-type connector.

For connection data consult the tables on page 5.



These BNC connectors have no function on this unit.

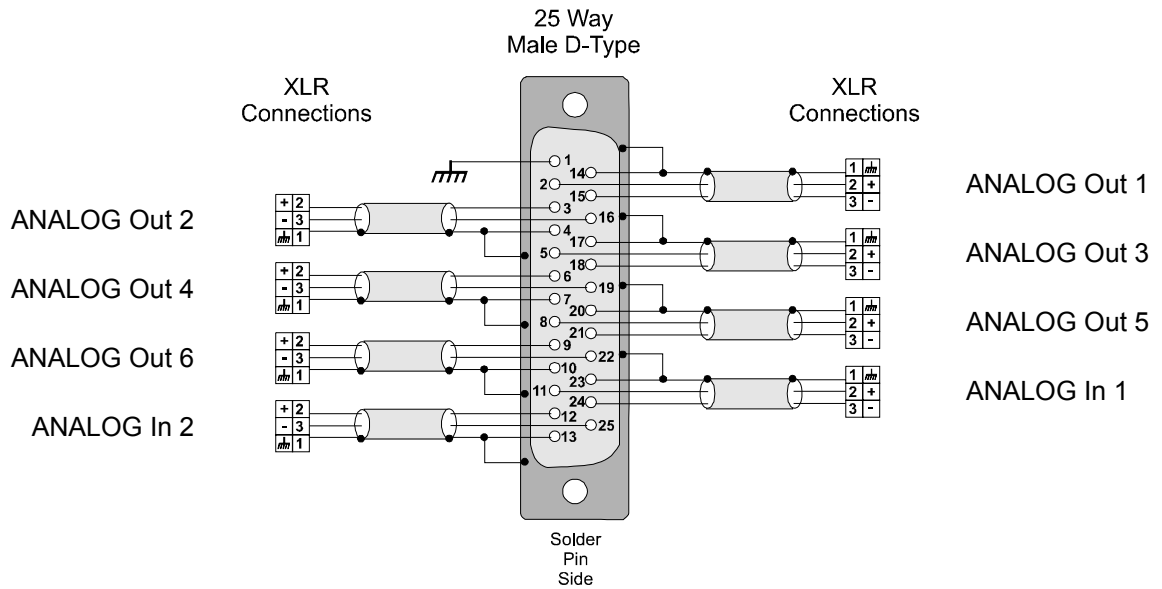
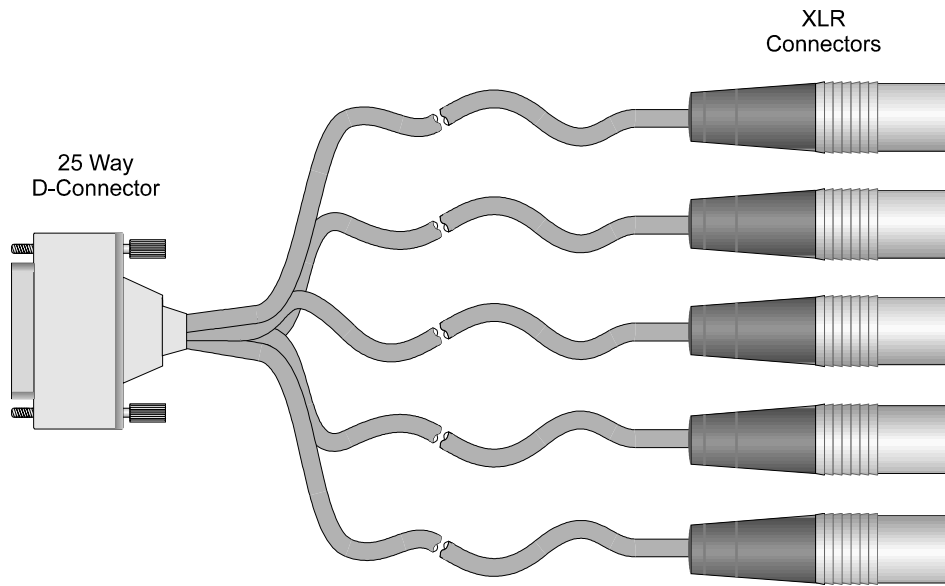


Connection Details

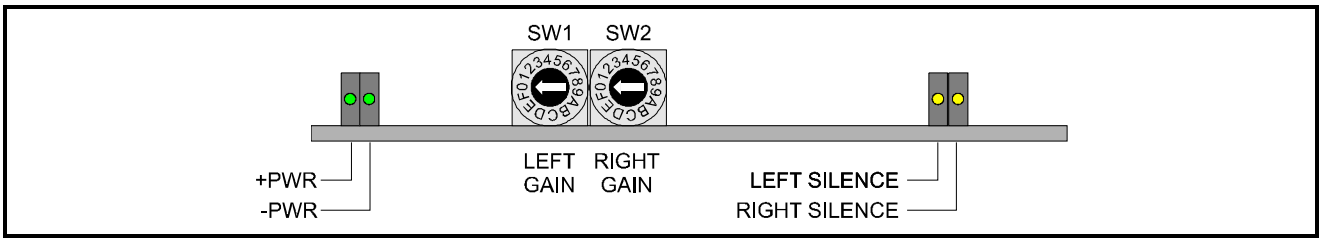
25 Way D Connector Pin Number	Description	Ribbon Cable Strand Number	Standard Pin Assignment
1		1	CHASSIS
14	ANALOG OUT 1 Gnd	2	GND1
2	ANALOG OUT 1 +	3	1+
15	ANALOG OUT 1 -	4	1-
3	ANALOG OUT 2 +	5	2+
16	ANALOG OUT 2 -	6	2-
4	ANALOG OUT 2 Gnd	7	GND2
17	ANALOG OUT 3 Gnd	8	GND3
5	ANALOG OUT 3 +	9	3+
18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

Example of Connection Details to XLR Connectors



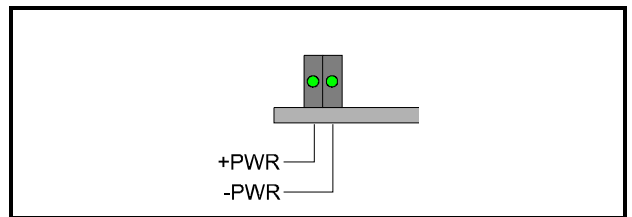
CARD EDGE CONTROLS (-R Versions only)



LED INDICATORS

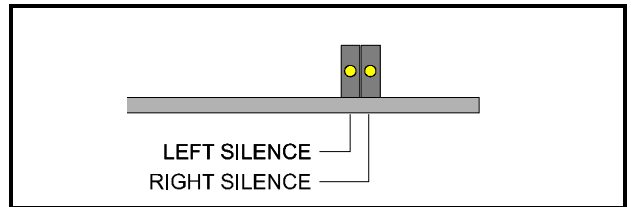
+PWR and -PWR

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



Left and Right Silence

These indicators will become illuminated if the signal input level of the channel falls below -20 dBu for a period of greater than 40 seconds.

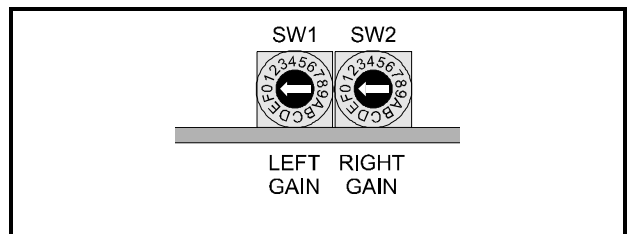


SW1 and SW2

These two switches allow the gain of the left and right channels to be set.

Settings are as follows:

Position	Gain dB
0	0
1	6
2	12
3	18
4	24
5	30
6	30
7	30
8	30
9	30
A	30
B	30
C	-24
D	-18
E	-12
F	-6

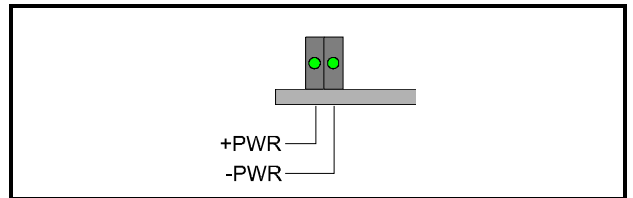


CARD CONTROLS (-0 Versions only)

LED INDICATORS

+PWR and -PWR

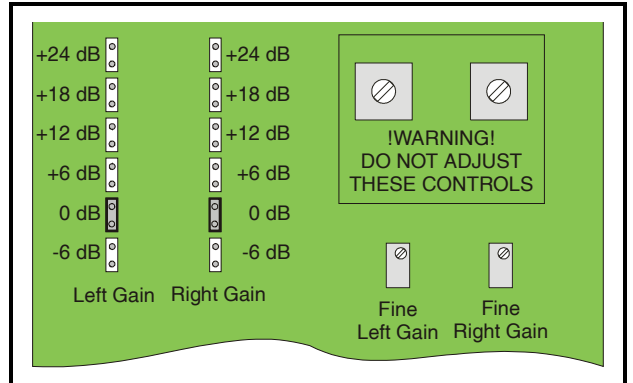
These two indicators are illuminated when the positive and negative supplies are present.



Gain Adjustment

The overall gain of each channel may be adjusted using links and a variable potentiometer.

Fitting the link provides the coarse adjustment of -6 dB, 0 dB, +6 dB, +12 dB, +18 dB and +24 dB. The card is supplied with the link fitted as shown opposite, in the 0 dB position.



Adjusting the 10-turn potentiometer provides fine adjustment of ± 6 dB. The card is supplied with the control set to the 0 dB position.

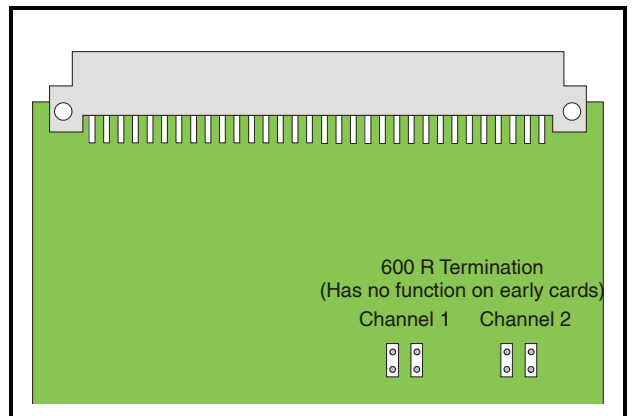
Caution: Do not adjust the square single turn controls.

Input Termination Setting (-0 and -R versions)

The input impedance for the two channels may be set to HIGH (10,000 Ohms) or LOW (600 Ohms) by means of a link.

When both links are fitted the input impedance is 600 Ohms.

When both links are not fitted the input impedance is 10,000 Ohms.



Note that both of the links (per channel) must be moved when changing this setting.

Important Note

On early versions of this card it is not possible to set the input impedance to 600 Ohms with this link and the input impedance will always be 10,000 Ohms.

The code on the white PCB assembly label will determine whether the card is an early or later version.

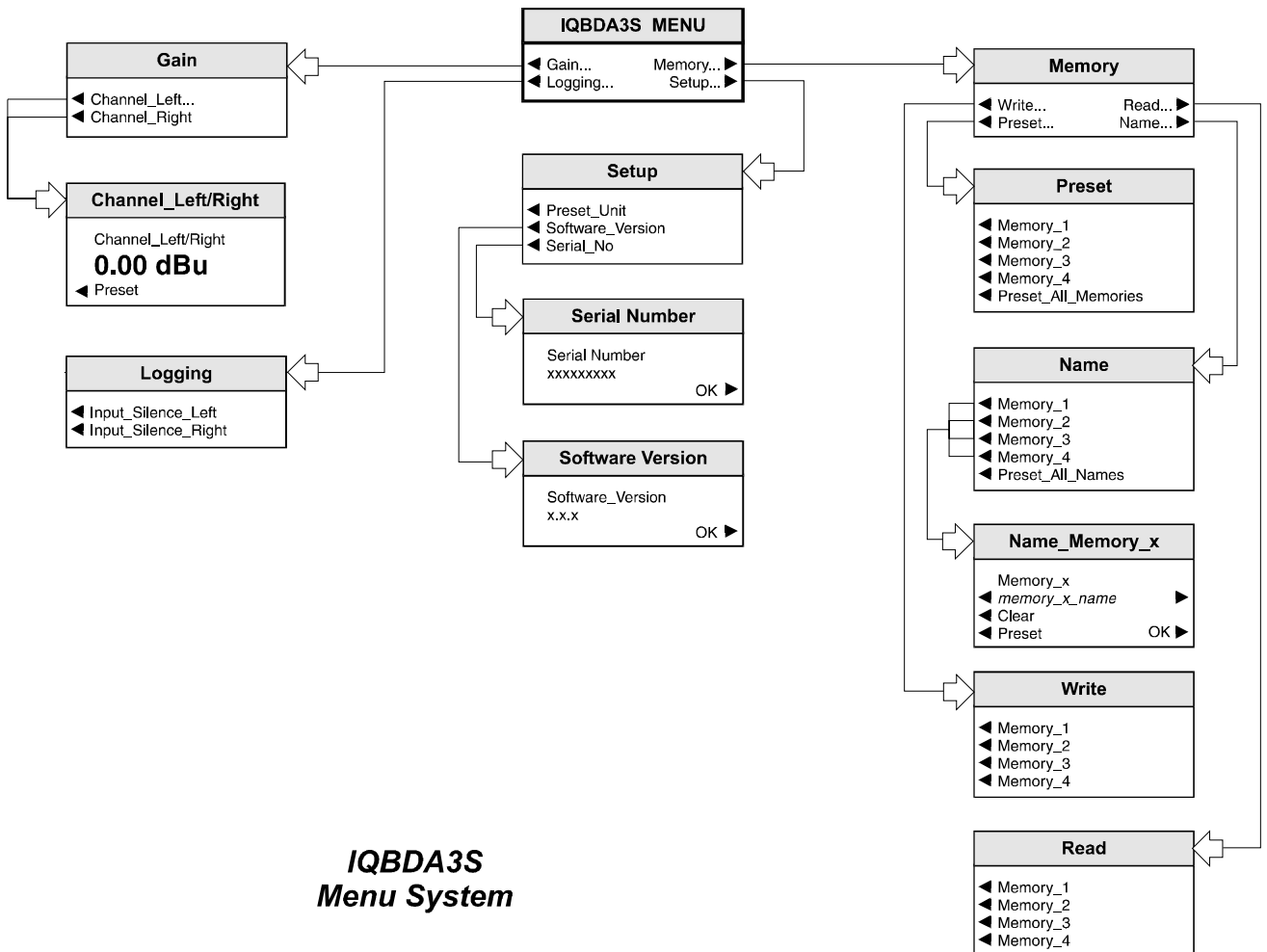
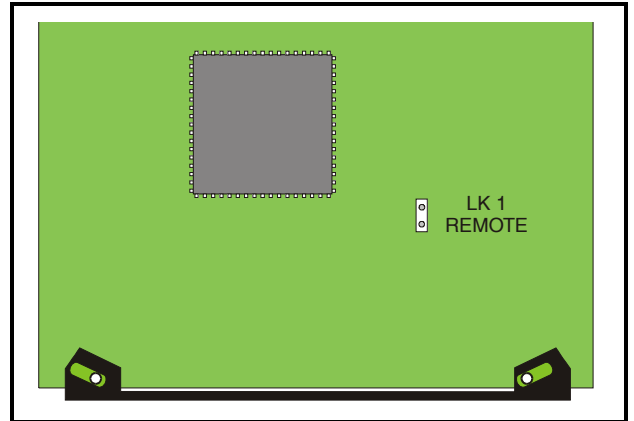
Early cards will be coded:
SAANRBDA3S1x

Later cards will be coded:
SAANRBDA3S1A, 1B, 1C etc.

LK1 REMOTE (-R versions)

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 the card edge controls will override the remote control settings. The RollCall™ control panel will then follow these settings.

Note that in Mainframes where RollCall™ is not available the link LK1 (Remote) located near the center of the card should be set to the OFF (unconnected) position. This ensures that when the unit is powered-up the factory default settings of parameters not available as card edge adjustments, are loaded. With the link in the ON (connected) position card will power-up with the last settings sent by the remote control panel.



OPERATION FROM AN ACTIVE CONTROL PANEL (-R versions only)

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

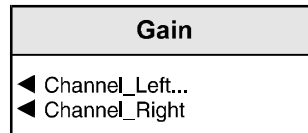
(see IQ Menu System on previous page)

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.

◀ Gain

This selection allows the gain of the left and right channels to be set.

When the channel is selected a numerical display will appear.

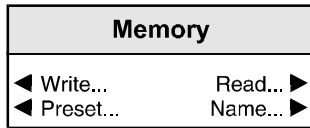


By operating the spinwheel the gain may be adjusted.

The range of adjustment is from -24 dBu to +30 dBu in steps of 0.5 dB.

Preset is to 0 dB.

Memory ▶



This function reveals a sub-menu that allows control of the user memories.

◀ Write

This function reveals a sub-menu that allows the settings of all items to be saved. Up to 4 different set-ups may be saved in the 4 memory locations.

*They can all be renamed using the **Name ▶** menu.*

Read ▶

This function reveals a sub-menu that allows 4 different settings of all items to be recalled from the 4 memory locations as saved in the **◀ Write** function.

◀ Preset

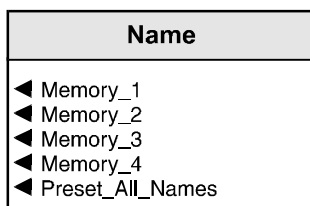
This selection allows individual (select memory location e.g. **◀ Memory_1**) or all (select **◀ Preset_All_Memories**) memory locations to be cleared and returned to their default (factory) settings.

Name ▶

This selection allows renaming of memory 1 to 4 locations.

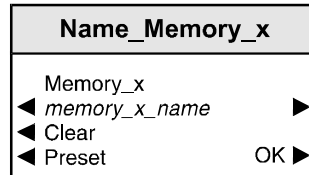
To rename a memory location when operating in a particular standard, select:

◀ Name 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.

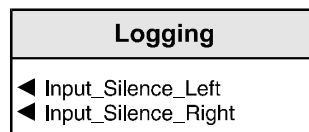
The **◀ Clear** function blanks out the selected character.

The **◀ Preset** function loads the default text, for example, Memory_1.

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

The **◀ Preset_All_Names** function loads the default text to all memories.

◀ 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 Modular System Operator's Manual, Section 1, The RCIF Menu System)

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

- ◀ Input_Silence_Left
- ◀ Input_Silence_Right

Factory preset is nothing enabled.

Setup ►

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

◀ 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 Setup Menu.

◀ Serial Number

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

