

# IQMDDA ASI Distribution Amplifier with Signal Inversion



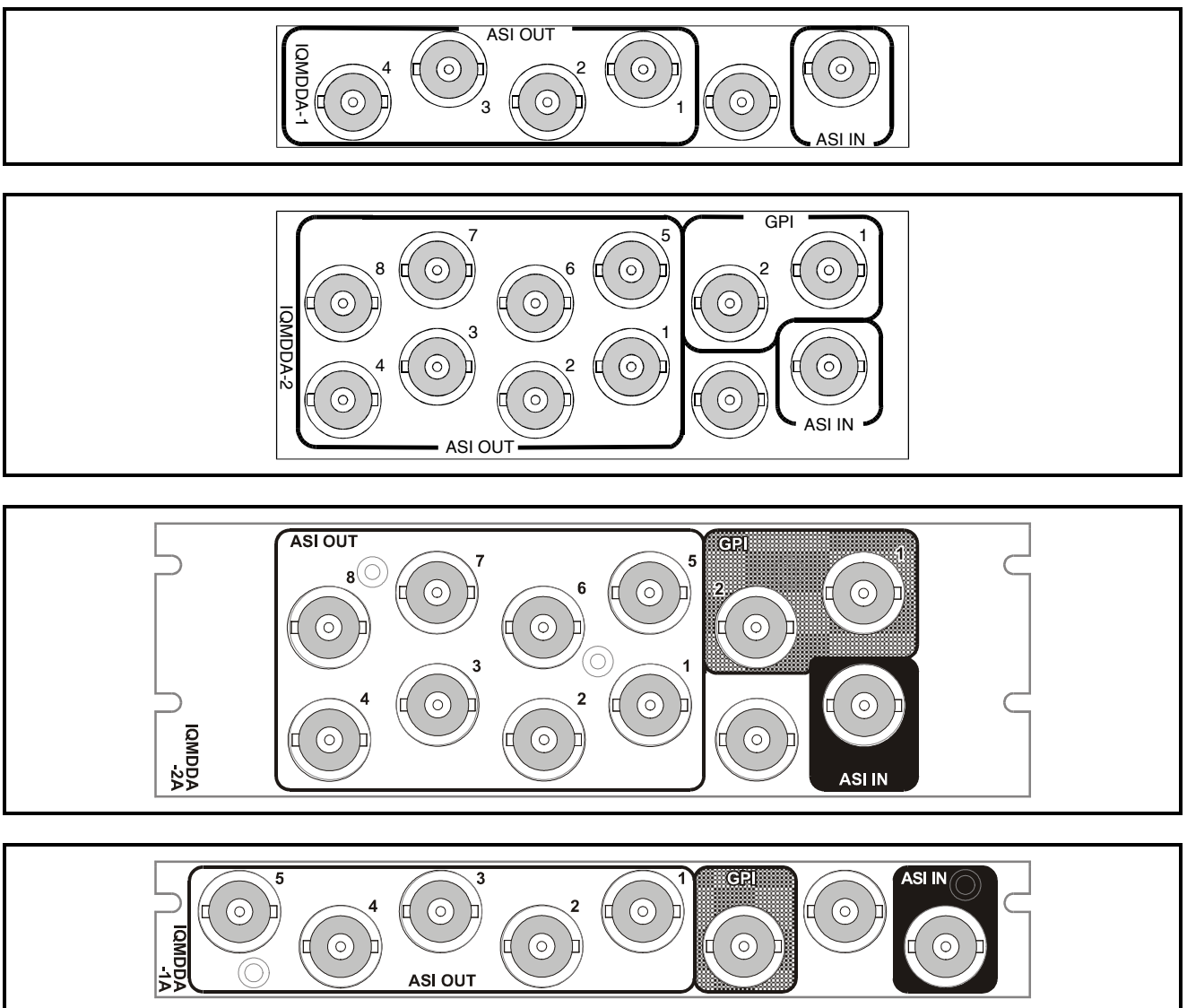
## Module Description

The IQMDDA is an ASI distribution amplifier with up to 8 outputs in double width or 4 outputs in single width. The input is transformer coupled and equalized to > 100 m of high quality cable. All outputs are reclocked and transformer coupled. A switch control, both locally and remote, selects true or inverted data polarity. This may be needed in instances where polarity sensitive ASI data has passed through inverting SDI equipment.

On the double width module 2 GPI ports are available which may be configured to switch data polarity or report input loss.

Input loss and data inversion control are available for access over the RollCall remote control network. The RollCall logging utility enables events to be logged on a remote server(s).

## REAR PANEL VIEWS



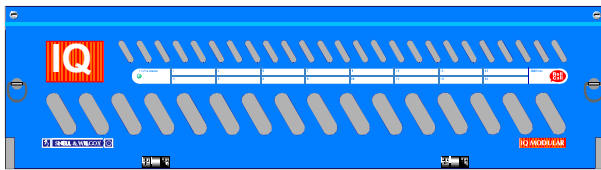
Versions of the module cards available are:

IQMDDA-1	ASI distribution amplifier 4 outputs	Single width module
IQMDDA-2	ASI distribution amplifier 8 outputs + 2 GPI	Double width module
IQMDDA-1A	ASI distribution amplifier 5 outputs + 1 GPI	Single width module
IQMDDA-2A	ASI distribution amplifier 8 outputs + 2 GPI	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**

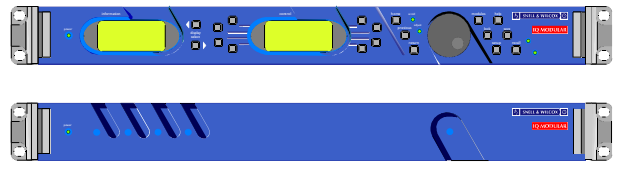
Rear panels **with** the suffix A may only be fitted into the ‘A’ style enclosure shown below.



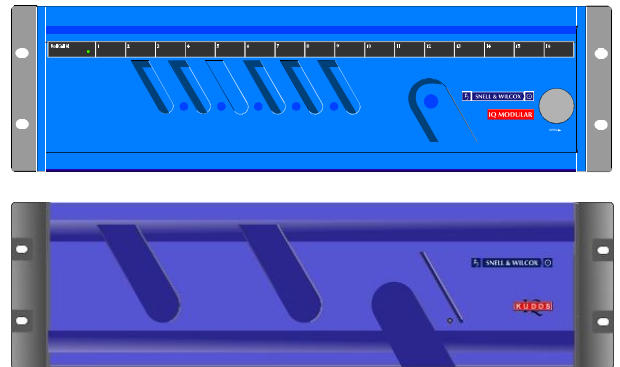
(Enclosure order codes IQH3A-E-O, IQH3A-E-P, IQH3A-N-O, IQH3A-N-P)

**‘O’ Style Enclosures**

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

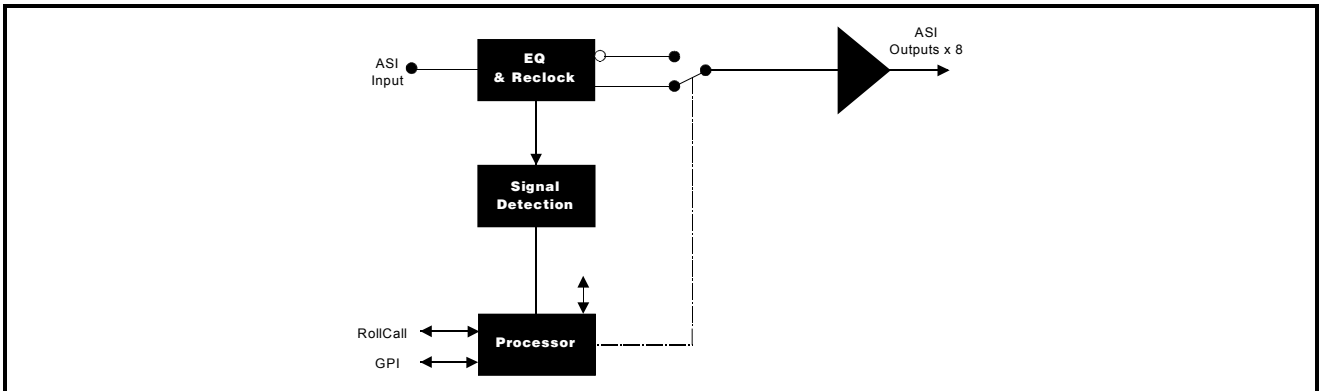


(Enclosure order codes IQH1S-RC-O, IQH1S-RC-AP, IQH1U-RC-O, IQH1U-RC-AP, Kudos Plus Products)



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

BLOCK DIAGRAM



**Features**

- ASI Distribution amplifier with up to 8 outputs
- Equalized and transformer coupled input
- Selectable true or inverted data polarity
- Reclocked and transformer coupled outputs
- RollCall remote control
- Monitoring of data presence
- 2 Configurable GPI ports

TECHNICAL PROFILE

**Features**

**Signal Inputs**

Data ..... ASI (270MBit/s)  
 Standards ..... DVB-ASI, ETR290  
 GPI 1 (Double width only) .. Configurable as:  
     1) Data polarity switch input - Closing contact  
     2) Loss of data warning  
 GPI 2 ..... Configurable as:  
     1) Data polarity switch input - Closing contact  
     2) Loss of data warning

**Signal Outputs**

Serial Data ..... Up to 8ASI (270MBit/s)  
 Standards ..... DVB-ASI, ETR290

**Specifications**

Serial Input Return Loss..... Better than -15 dB to 270 MHz  
 Maximum Input Cable Length  
     >100 m (PSF1/2 or equiv. cable)  
 Signal Output Level..... 800 mV ±10%  
 Output Return Loss..... Better than -15 dB to 270 MHz

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

Data Invert ..... On/Off

**Indicators**

Power OK..... Green LED  
 Signal Presence ..... Yellow LED  
 Signal Inverted ..... Yellow LED  
 Signal not Inverted ..... Yellow LED

**Functions Available via RollCall™ Only**

Log data presence ..... On/Off  
 GPI Configuration..... Input/ Output  
 GPI Sense ..... Inverted/ Non-inverted  
 Labeling of Input ..... Up to 8 ASCII characters

Output Jitter ..... < 0.2UI

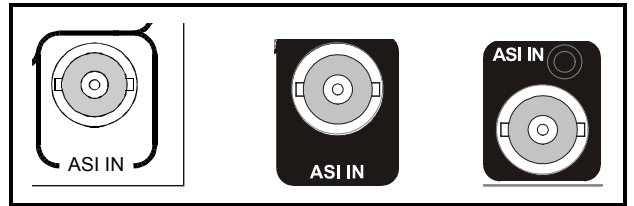
**Power Consumption**

Module Power Consumption  
     6.6W max

INPUTS AND OUTPUTS

ASI INPUT

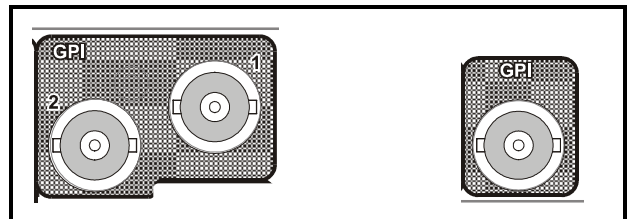
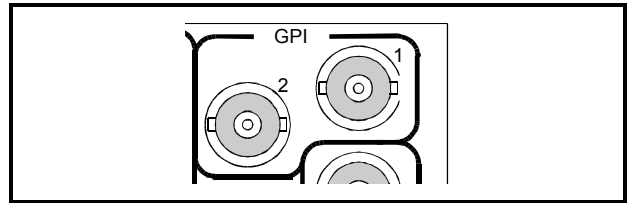
The ASI input to the unit is made via this BNC connector which terminates in 75 Ohms.



GPI I/Os

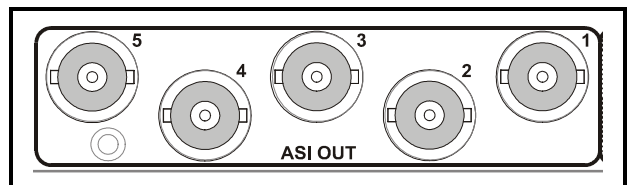
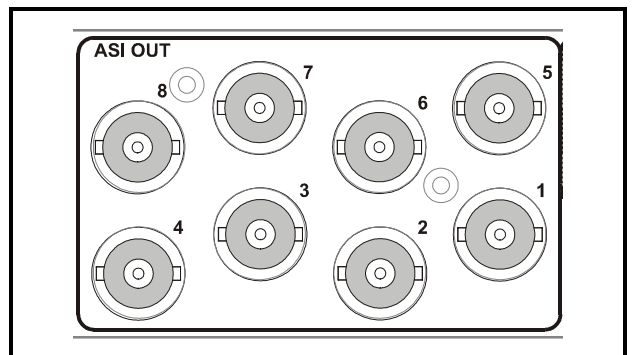
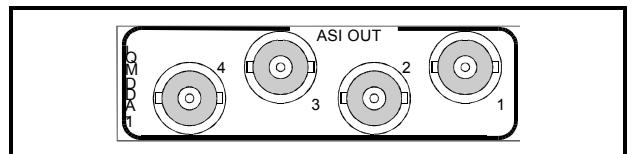
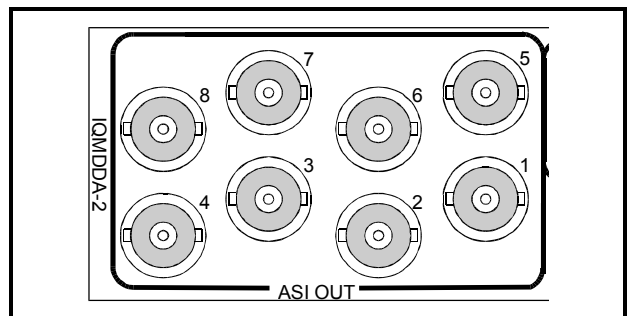
The GPI ports are a closed contact type. When enabled these are configurable to be either

- Signal Inversion (GPI Input)
- Input Loss (GPI Output)

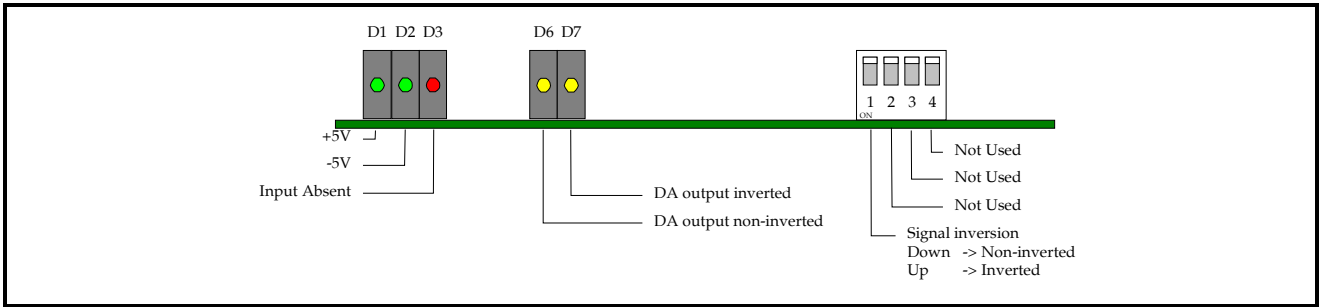


ASI OUTPUTS

These are the isolated ASI outputs of the unit via BNC connectors for 75 Ohms.



CARD EDGE CONTROLS



LED INDICATORS

D1

When illuminated, D1 indicates that the +5 V power supply is present.

D2

When illuminated, D2 indicates that the -5 V power supply is present.

D3

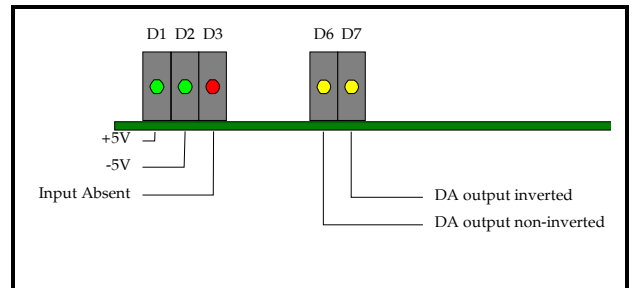
When illuminated, D3 indicates that there is no signal at the input

D6

When illuminated, D6 indicates that the output signal is not inverted.

D7

When illuminated, D7 indicates that the output signal is inverted.

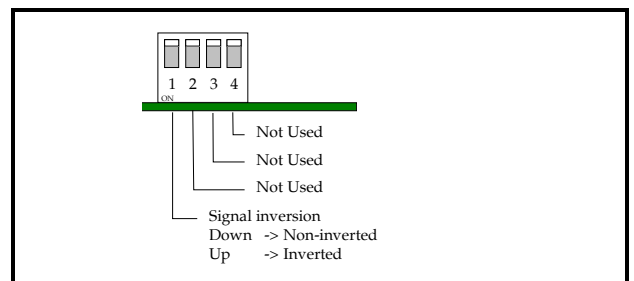


4-WAY DIP SWITCH

Position 1      Signal Invert

When set to the UP position the signal will be inverted.

When to set to the down position the signal will be non-inverted.



Positions 2, 3 and 4 are not used.

## MENU DETAILS VIA PC RollCall REMOTE CONTROL

### SETUP MENU

This menu gives a general status of the module. When the User level is set to **User** this is the only control menu accessible in the RollCall control panel.

It has the following fields:

#### Current Input Loss Errors

This field pertains the status of signal presence or absence at the input to the module. It consists of:

**Status** – this gives the current status of the input loss error, either OK or FAIL

**Show Stats** – This is a check box which, when activated, causes the input loss error statistics to be displayed in the information window.

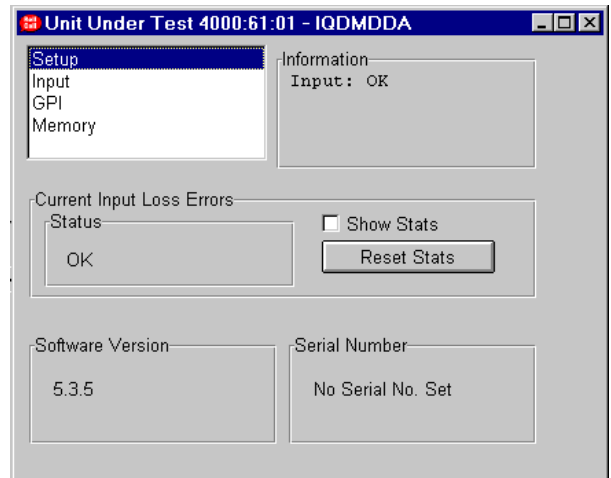
**Reset Stats** – This is a control button which, when pressed, causes the input loss error count displayed in the information window to be reset to zero.

#### Software version

This field shows the version number of the software installed on the module.

#### Serial Number

This field shows the serial number of the particular module being accessed.



## INPUT MENU

This menu controls the inversion of the input signal. It has the following fields:

### Logging

This contains a check box to enable the generation of log messages over RollCall so that the input loss status of the module can be monitored by a remote log server.

### Input

This enables the user to assign a label of up to 8 ASCII characters to the signal; passing through the module. The label is changed by typing the string in the text window and clicking on the arrow button to send it to the module.

This label will appear in the information window, the input select field and the input loss log messages generated for a remote log server.

### Input Select

This field controls whether the input signal is inverted before being reclocked and buffered to the outputs. The options are:

**Non-Inv** – When selected, the input signal is passed through with the polarity unchanged.

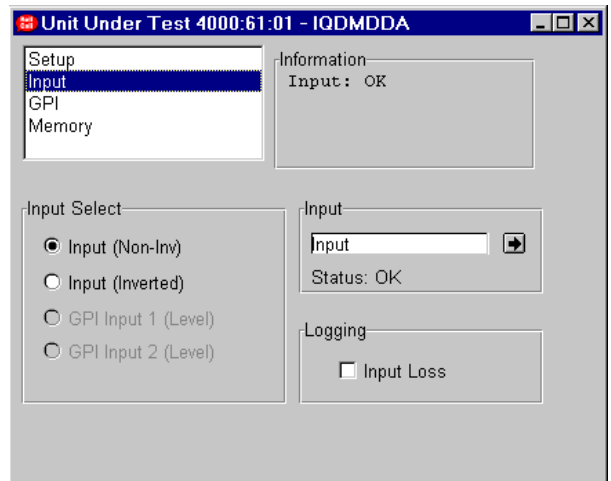
**Inverted** – When selected, the input signal is passed through with the polarity inverted.

**GPI Input 1** - When selected, the polarity of the signal passed through is controlled by the state of port GPI 1.

**N.B.** If GPI1 is not configured as an input (see GPI menu) this field is grey and cannot be selected

**GPI Input 2** – When selected, the polarity of the signal passed through is controlled by the state of port GPI 2.

**N.B.** If GPI2 is not configured as an input (see GPI menu) this field is grey and cannot be selected



## GPI MENU

This menu controls the configuration of the GPI ports available on the double width module. It has the following fields:

### Configure GPI 1

This controls the direction of port GPI 1. The options are:

**Off** – This will inactive port GPI 1.

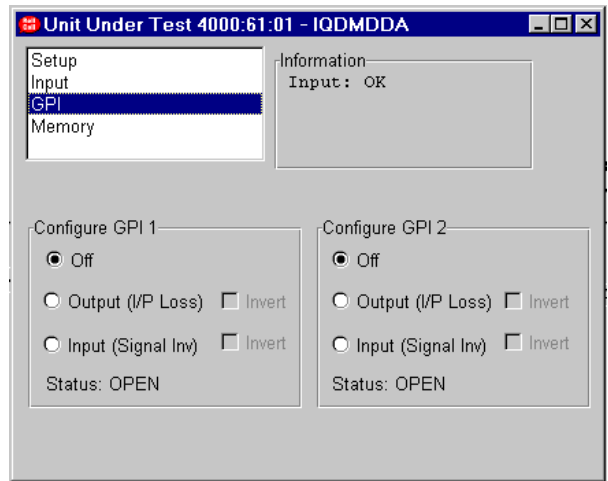
**Output** – This will configure port GPI 1 as an output controlled by the input loss error. If the invert box is *not* checked then GPI 1 will give a LOW output with no error and a HIGH output when an error occurs. Checking the invert box will give the opposite behaviour.

**Input** – This will configure port GPI 1 as an input, which can control the signal polarity inversion. If the invert box is *not* checked then a CLOSED contact across GPI 1 will cause the signal to be inverted and an OPEN contact will cause the signal to pass unchanged. Checking the invert box will give the opposite behaviour.

In addition, a Status line is provided to show the current state of port GPI 1. When GPI 1 is configured as an output this status shows **HIGH** or **LOW**. When it is either inactivated or configured as an input the status shows **CLOSED** or **OPEN**.

### Configure GPI 2

This controls the direction of port GPI 2. Options are the same as for GPI 1.





## MEMORY MENU

This menu controls the configuration memories that can be used to store and retrieve up to 4 preset configurations for the module. It has the following fields:

### Store To Memory

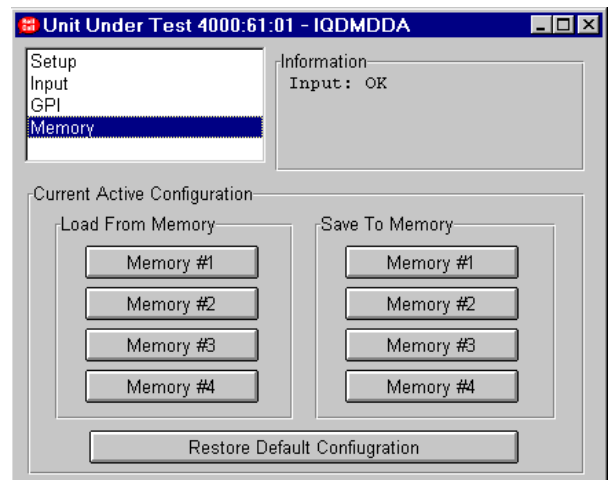
Pressing one of the buttons **Memory #1 – #4** will store the current card configuration to the memory in question. Any configuration data previously held in that memory will be lost.

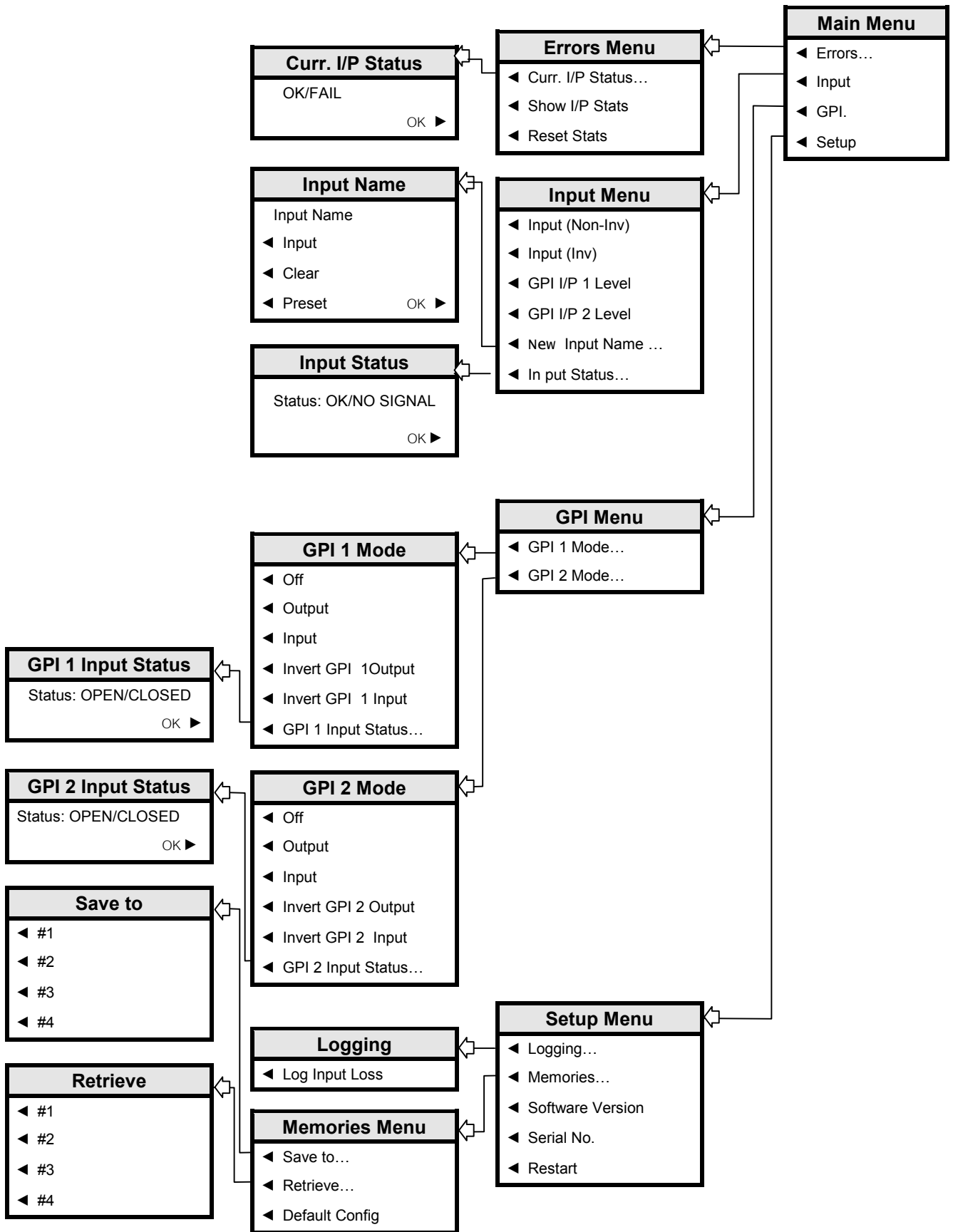
### Load From Memory

Pressing one of the buttons **Memory #1 – #4** in this field will retrieve a card configuration from the memory in question and configure the module accordingly. The current configuration settings of the card will be lost.

### Restore Default Configuration

Pressing this button will replace all of the current configuration settings to the default values. The current configuration settings of the card will be lost.





OPERATION FROM AN ACTIVE CONTROL PANEL

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

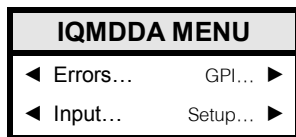
The menus available for this card are shown on page opposite and will appear in the Control display window. Operational details of the control panel can be found in SECTION 1 of the Modular System Operator's Manual.

MENU DETAILS

(see IQMDDA Menu System on previous page)

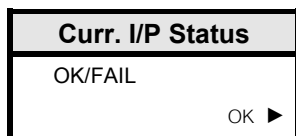
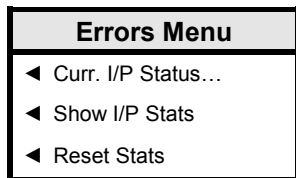
MAIN MENU

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.

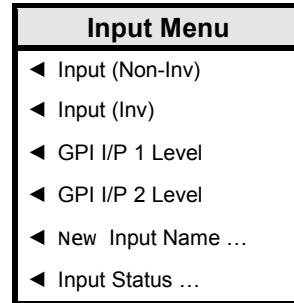
Whenever a menu item is selected the parameters of that selection will be displayed in the Information window of the front panel. Where the selection is purely a mode selection and does not enable a sub-menu, the text will become reversed (white-on-black) indicating that the mode is active. If the mode is not available for selection the text will remain normal.



◀ Curr. I/P Status  
This shows the category of error – either Ok or FAIL.

◀ Show I/P Stats  
Causes the input loss error statistics to be displayed in the information window.

◀ Reset Stats  
Causes the input loss error count displayed in the information window to be reset to zero.

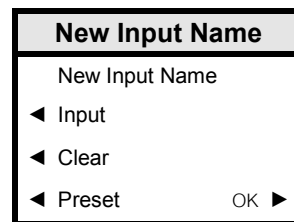


◀ Input (Non-Inv)  
When selected, the input signal is passed through with the polarity unchanged.

◀ Input (Inv)  
When selected, the input signal is passed through with the polarity inverted.

◀ GPI I/P 1 Level  
When selected, the polarity of the signal passed through is controlled by the state of port GPI 1 (provided that GPI 1 has been configured as an input).

◀ GPI I/P 2 Level  
When selected, the polarity of the signal passed through is controlled by the state of port GPI 1 (provided that GPI 1 has been configured as an input).



◀ New input text  
An ASCII label for the input signal of up to 8 characters.

◀ Clear  
Clears the label string.

◀ Preset  
Sets the label string to the factory default ("Input").

### ◀ Input Status

Input Status	
Status: OK/NO SIGNAL	
{Input_selected}	OK ▶

### ◀ GPI 1 Input Status

GPI Input Status	
Status: OPEN/CLOSED	
	OK ▶

### ◀ GPI...

GPI Menu	
◀ GPI1 Mode...	GPI2 Mode... ▶

### ◀ GPI 2 Mode

See GPI 1 Mode

### ◀ GPI 1 Mode

GPI 1 Mode	
◀ Off	
◀ Output	
◀ Input	
◀ Invert GPI 1 Output	
◀ Invert GPI 1 Input	
◀ GPI 1 Input Status...	

### ◀ Setup...

Setup Menu	
◀ Logging...	
◀ Memories...	
◀ Software Version	
◀ Serial No.	
◀ Restart	

#### ◀ Off

Turns off the GPI port.

#### ◀ Output

Configures port GPI 1 as an output to indicate input signal loss.

#### ◀ Input

Configures port GPI 1 as an input to control the signal polarity inversion.

#### ◀ Invert GPI Output

If this is *not* selected then GPI 1 will give a LOW output with no error and a HIGH output when an error occurs. Selecting this option will give the opposite behaviour.

#### ◀ Invert GPI Input

Sets the polarity of the GPI input  
If this is *not* selected then a CLOSED contact across GPI 1 will cause the signal to be inverted and an OPEN contact will cause the signal to pass unchanged. Selecting this option will give the opposite behaviour.

### ◀ Logging

Logging	
◀ Log Input Loss	

#### ◀ Log Input Loss

Selecting this option enables the generation of log messages over RollCall so that the input loss status of the module can be monitored by a remote log server.

### ◀ Memories

Memories Menu
◀ Save to...
◀ Retrieve...
◀ Default Config

### ◀ Save to / Retrieve

Save to / Retrieve
◀ #1
◀ #2
◀ #3
◀ #4

#### ◀ #1 - #4

These options represent the 4 configuration memories available. Selecting one of these will either save the current configuration settings to the memory selected or retrieve the settings from that memory and configure the module accordingly

#### ◀ Default Config

Selecting this option resets all of the configuration settings on the module to the default settings

### ◀ Software Version

Software Version
Software Version
{version}      OK ▶

### ◀ Serial No

Serial No
Serial No
{serialNo}      OK ▶

### ◀ Restart

This menu allows the unit to be reset remotely.

