

IQMMX2 2-Input Router & ASI Distribution Amplifier

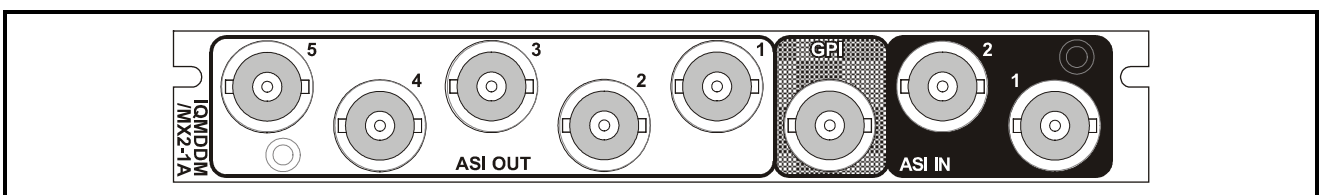
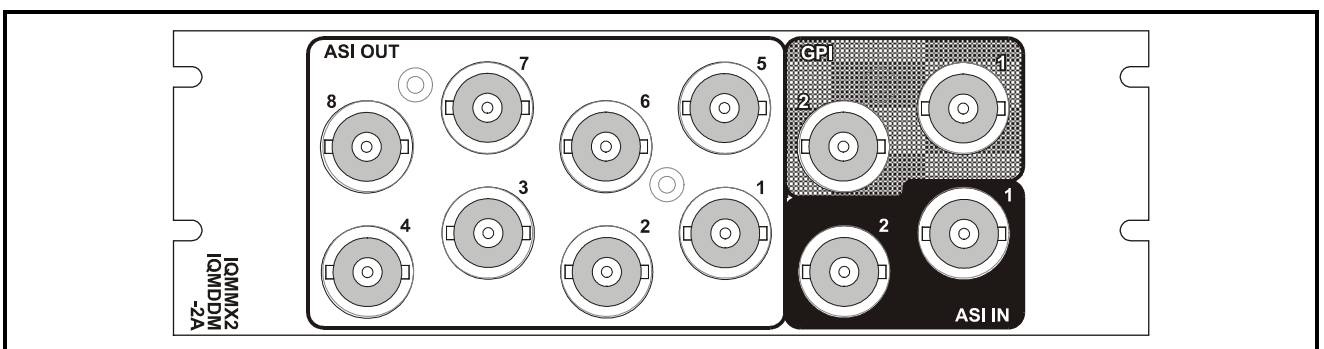
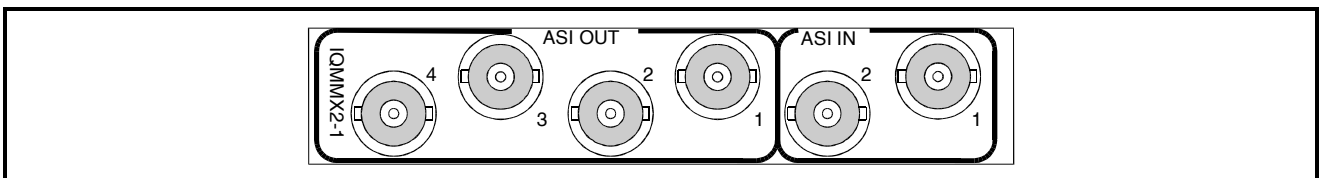
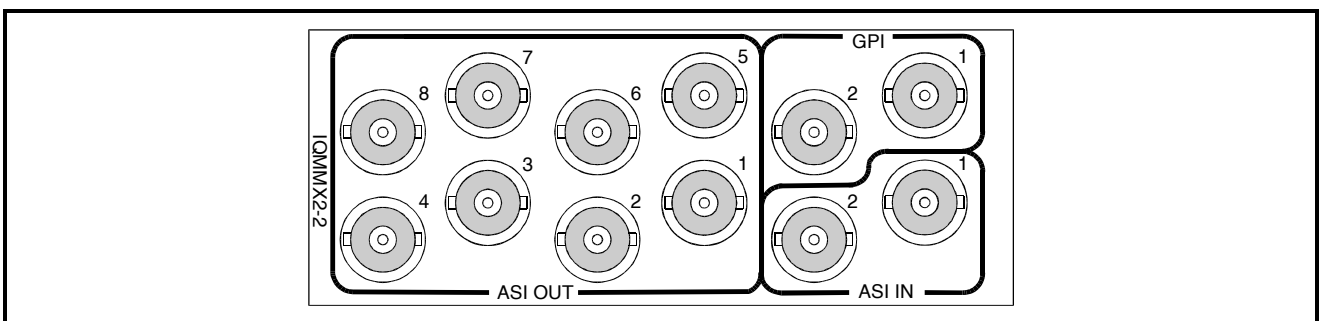


Module Description

The IQMMX2 is an ASI 2 to 1 switch, distribution amplifier and transport stream switcher with up to 8 outputs in double width form or up to 5 outputs in single width form. The inputs are transformer coupled and equalised to > 100 m of high quality cable. All outputs are re-clocked and transformer coupled.

On the double width module 2 GPI ports are available which may be configured to switch data input or report signal loss on either or both inputs. Control and errors are accessible over the RollCall remote control network. The RollCall logging utility enables events to be logged on a remote server(s).

REAR PANEL VIEWS



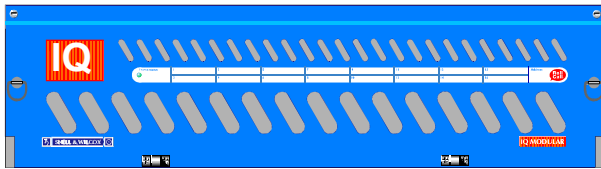
Versions of the module cards available are:

IQMMX2-1	2 Input ASI distribution amplifier & switcher 4 outputs	Single width module
IQMMX2-2	2 Input ASI distribution amplifier & switcher 8 outputs + 2 x GPI	Double width module
IQMMX2-1A	2 Input ASI distribution amplifier & switcher 5 outputs + 1 GPI	Single width module
IQMMX2-2A	2 Input ASI distribution amplifier & switcher 8 outputs + 2 x 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

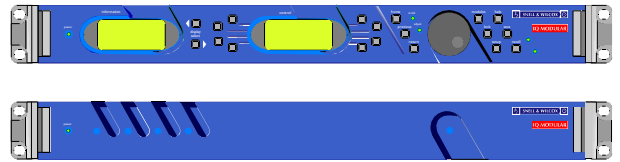
Rear panels **with** the suffix A may only be fitted into the ‘A’ style enclosure shown below.



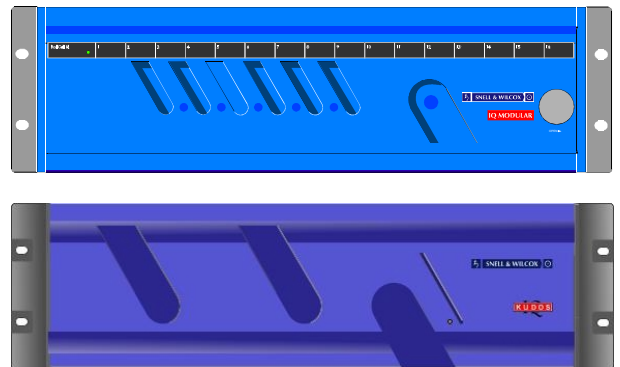
(Enclosure order codes IQH3A-E-O, IQH3A-E-P, IQH3A-N-O, IQH3A-N-P)

‘O’ Style Enclosures

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

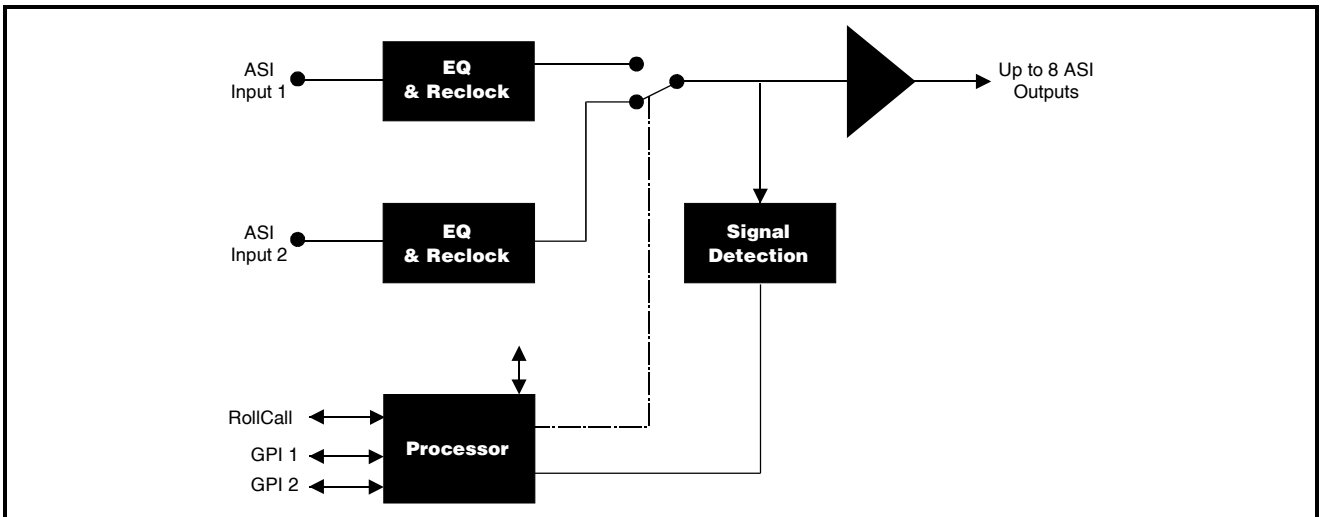


(Enclosure order codes IQH1S-RC-O, IQH1S-RC-AP, IQH1U-RC-O, IQH1U-RC-AP, Kudos Plus Products)



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

BLOCK DIAGRAM



Features

- ASI 2-to-1 switch and distribution amplifier
- Detection and logging of signal loss
- Automatic input switching on error (no data carrier detected)
- Equalised and transformer coupled input
- 4 / 8 Reclocked and transformer coupled outputs (depending on the option)
- 2 Configurable GPI ports (-2 option only)

Technical Profile

Features

Signal Inputs

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

Signal Outputs

Serial Data Up to 8 ASI (270MBit/s)

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..... 800mV ±10%
 Output Return Loss..... Better than -15 dB to 270 MHz

Standards

Card Edge Controls (also available via RollCall)
 Input Select..... Input 1/ Input 2

Indicators

Power OK..... Green LED (x2)
 ASI 1 Signal Absent..... Red LED

ASI 2 Signal Absent

ASI 1 Selected Yellow LED
 ASI 2 Selected Yellow LED
 Functions Available via RollCall™ Only
 Log Signal Absence On/Off

Output Jitter < 0.2UI

Power Consumption

Module Power Consumption
 5.1W max

INPUTS AND OUTPUTS

ASI INPUTS

The two ASI inputs to the unit is made via these BNC connectors which terminate in 75 Ohms.

*Note that if one of the two inputs is lost the unit will automatically select the valid input if the Input Select function is set to **Auto Select**.*

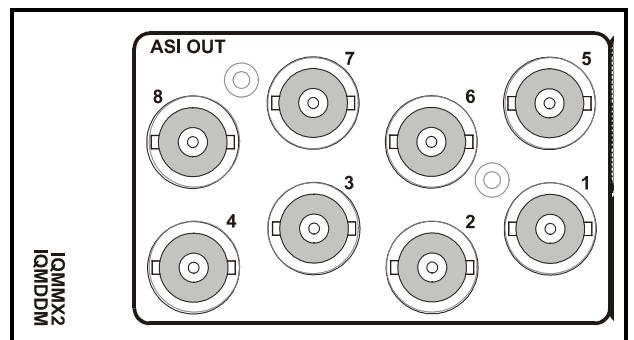
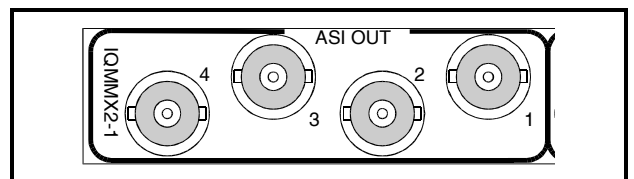
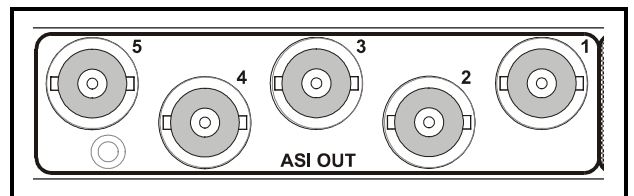
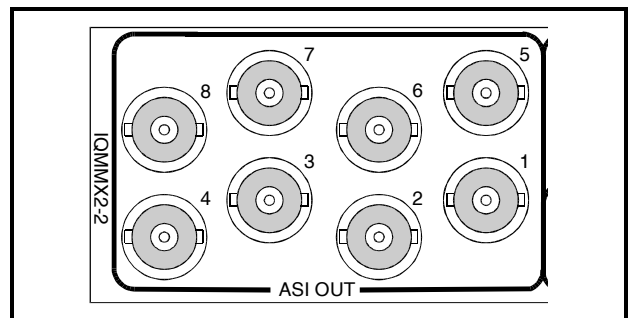
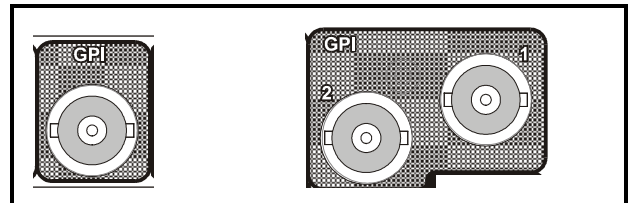
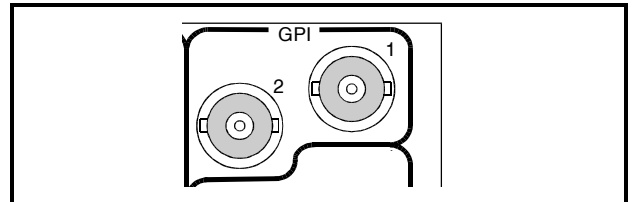
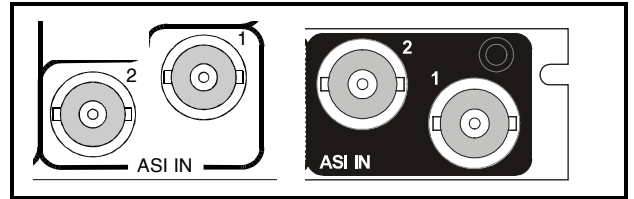
GPI INPUTS

When fitted these GPI ports are a closed contact type. When enabled they are configurable to any RollCall control or reporting parameter.

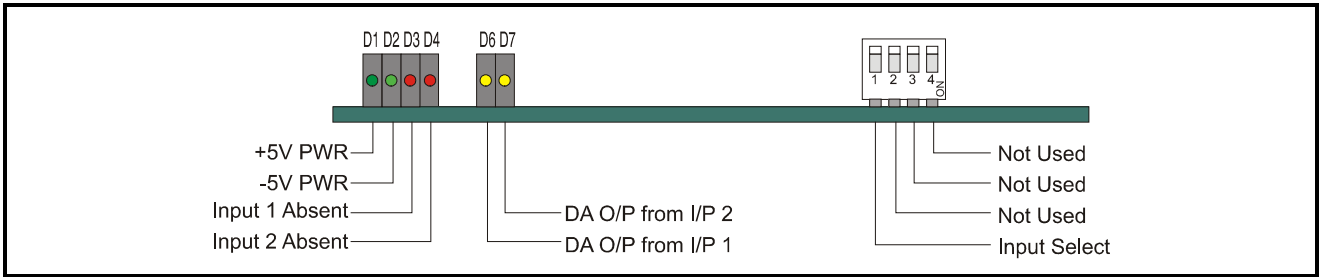
Note that on the IQMMX2-1A version the single GPI connector is assigned the GPI2 functions mentioned later in this manual.

ASI OUTPUTS

These are 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

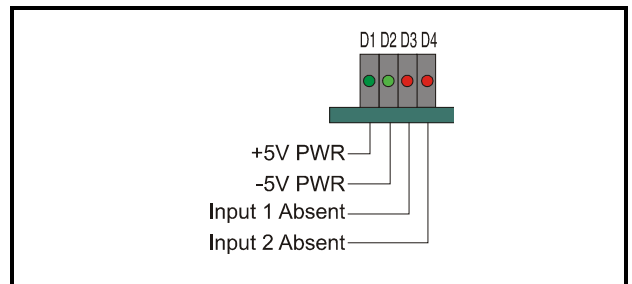
When illuminated, D2 indicates that the -5 V power supply is present.

D3

When illuminated, D3 indicates that Input 1 signal is not present.

D4

When illuminated, D4 indicates that Input 2 signal is not present.

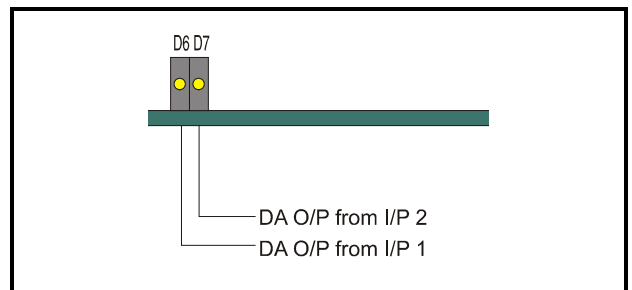


D6

When illuminated, D6 indicates that the distribution amplifier output is derived from Input 1.

D7

When illuminated, D7 indicates that the distribution amplifier output is derived from Input 2.



DIP SWITCH SW1

Position 1

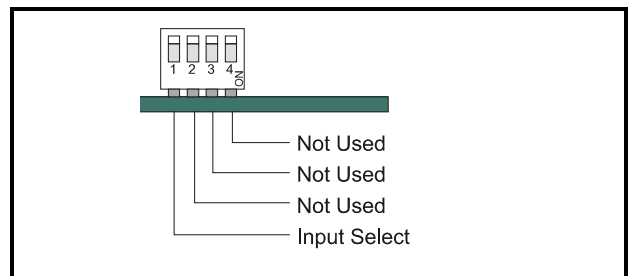
This allows the input signal to be selected.

UP = Input 2 selected

Down = Input 1 selected

Note that this switch must be toggled Up/Down or Down/Up to enable the selection.

Positions 2, 3 and 4 are not used.



MENU DETAILS VIA PC RollCall REMOTE CONTROL

STATUS MENU

This menu gives a summary of all the errors that the module is capable of monitoring.

Each category has:

A **Status** window

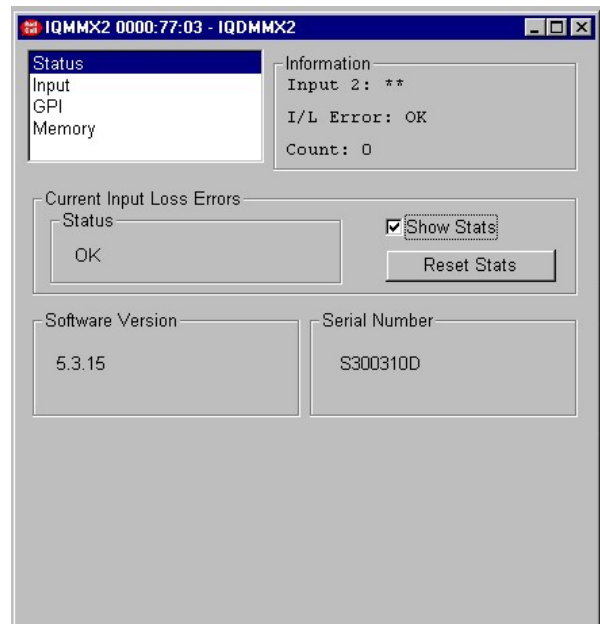
This indicates if the category of error is currently in error or not. The status can be either "**FAIL**" or "**OK**"

A **Show Stats** (statistics) check box

Checking this box will cause the current status and number of errors flagged to be shown in the **Information** window in the top right-hand corner.

A **Reset Stats** (statistics) button

Pressing this button will cause the error count for the error category in question to be zeroed.



The following error category is listed:

Current Input Loss Errors

This error occurs if the data carrier disappears on the input being relocked and routed through the distribution amplifier outputs.

NOTE:

If Rollcall is not operated in user levels of engineer and above access to some menu structures is not possible.

INPUT MENU

This menu allows the enabling or disabling of any of the error categories described in the Errors Menu section. It also controls the routing of the input signals to the distribution amplifier.

The menu has the following fields:

Input Select

This field controls which of the 2 ASI inputs is reclocked and routed through to the distribution amplifier outputs. The options are:

Auto Select – When selected, this will remain with the current input if there is a valid signal on it. If there is not, or the signal disappears, the module will switch to the other input, providing that there is a valid signal on that input. Note, in this case, the signal will not switch back to the input if there is no valid signal on either input then the module will revert to input A.

Input 1 – When selected, this will force the distribution amplifier outputs to be a reclocked copy of the signal on input 1.

Input 2 - When selected, this will force the distribution amplifier outputs to be a reclocked copy of the signal on input 2.

GPI Input – When selected, the routing of the input signals will be controlled by the level of the GPI port, provided that the GPI port is configured as an input (see **GPI Menu**)

Logging

This menu controls the generation of error messages to be logged by a RollCall logserver somewhere on the network (see RollCall user manual).

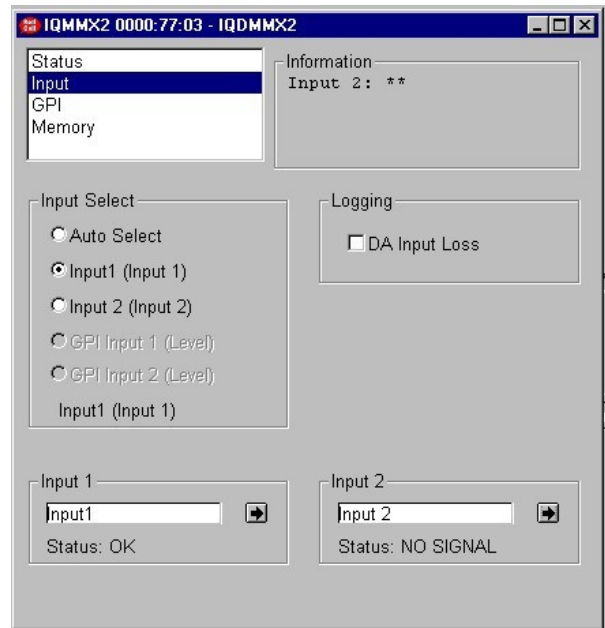
DA Input Loss

This error occurs if the data carrier disappears on the input Distribution Amplifier (DA). It can be enabled or disabled by checking or clearing the associated check box.

Input 1

This field allows the user to assign a name to input 1 and to view its status.

NAME – The name is entered in the text box and assigned by clicking on the right arrow send button.



STATUS – The line underneath the text box indicates whether a signal has been detected on input 1. It will show either OK or NO SIGNAL

Input 2

This field allows the user to assign a name to input 2 and to view its status. (see **Input 1**)

GPI MENU

This menu controls the configuration of the GPI port available on the double width module.

The menu has the following fields:

Configure GPI

This controls the direction of the two GPI ports, GPI 1 and GPI 2. Only one option may be checked.

Note that for the IQMMX2-1A version the single GPI connector is assigned the GPI 2 Mode functions.

The options are:

Off – This will inactive the GPI port.

Output – This will configure the GPI port as an output controlled by the options selected in the **GPI Output Trigger** field below.

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 the GPI port as an input, which can control the input routing of the distribution amplifier(see **Setup Menu**).

If the invert box is *not* checked then an **OPEN** contact across the GPI port will cause Input 1 to be routed to the outputs and a **CLOSED** contact will select Input 2.

Checking the invert box will give the opposite behaviour.

GPI Output Trigger

This field controls which errors can change the state of the GPI port when it is configured as an output. One option may be selected at once.

The options are:

Input 1 Loss

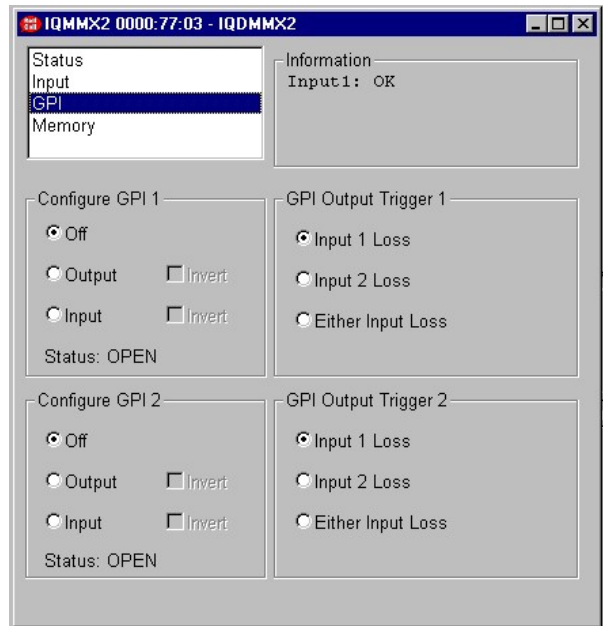
When checked, this will signal an error on the GPI output when no data carrier is detected on input A.

Input 2 Loss

When checked, this will signal an error on the GPI output when no data carrier is detected on input B.

Either Input Loss

When checked, this will signal an error on the GPI output when either of the 2 inputs losses the data carrier.



CONFIGURATION MEMORIES MENU

This menu allows the complete configuration of the module to be stored or retrieved in one of 4 locally held configuration memories.

The menu has the following fields:

Load From Memory

This field contains one button for each of the 4 locally stored configuration memories. Pressing one of these buttons causes all of the control parameters of the module to be set from the selected memory.

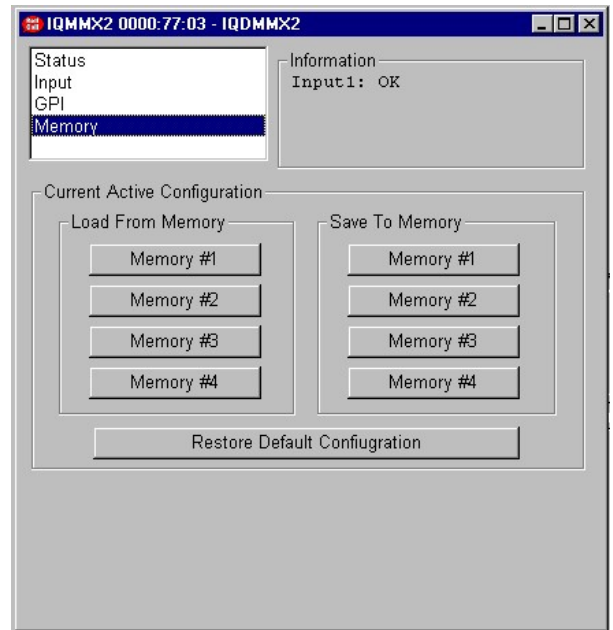
N.B. Loading from one of the configuration memories will cause all of the current parameter settings to be lost. No warning is given when this happens. If you wish to return to the current state the settings must first be saved in another of the configuration memories (see Save To Memory)

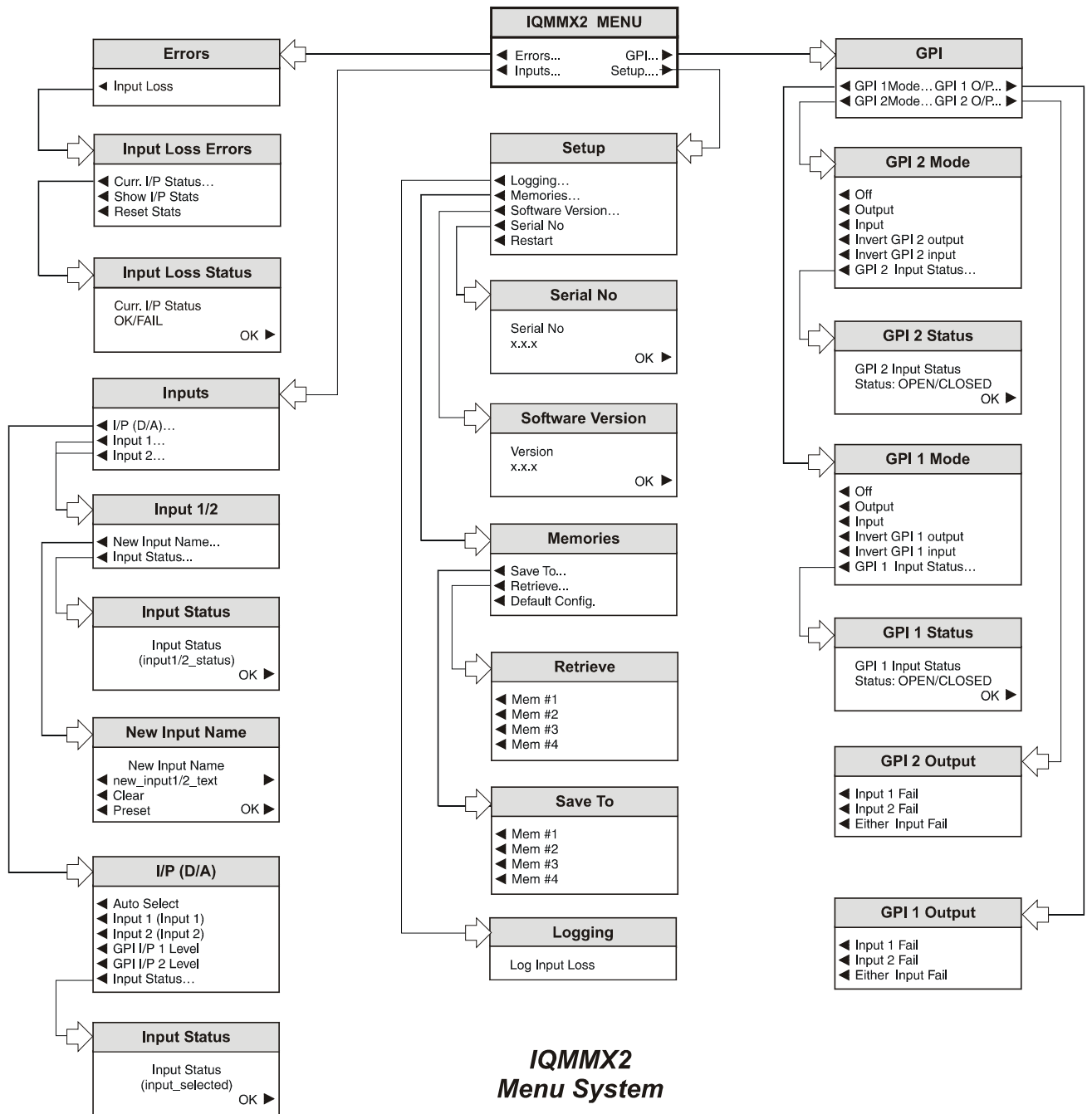
Save To Memory

This field contains one button for each of the 4 locally stored configuration memories. Pressing one of these buttons causes the current state of all the control parameters of the module to be saved to the selected configuration memory.

Restore Default Configuration

Pressing this button causes all of the control parameters of the module to be set to the factory default settings.





***IQMMX2
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.

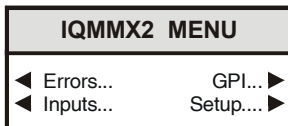
Operational details for the remote control panel will be found in SECTION 1 of the Modular System Operator's Manual.

MENU DETAILS

(see IQMMX2 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.

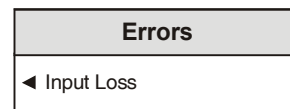


Note that where a menu item is followed by three dots (...) this indicates that a further sub-menu may be selected.

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.

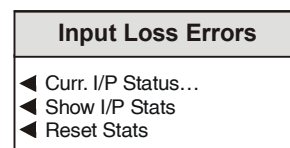
◀ Errors...

The errors menu is a list of the categories of error which can be displayed in the information window.

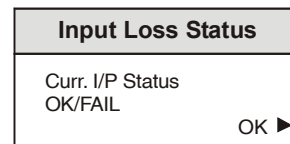


◀ Input Loss...

This error occurs if the data carrier disappears on the input being re-clocked and routed to the distribution amplifier outputs.



◀ Curr. I/P Status...



This shows the category of error – either Ok or FAIL.

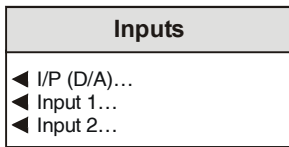
◀ Show I/P Stats

Causes the input loss error statistics to be displayed in the information window.

◀ Reset Stats

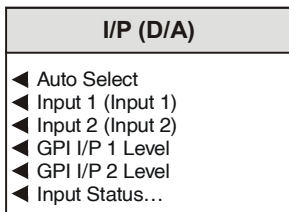
Causes the input loss error count displayed in the information window to be reset to zero.

◀ Inputs ...



This menu controls the source for both the distribution amplifier outputs and the transport stream monitor. It also allows the user to assign ASCII labels to the input signals

◀ I/P (Distribution Amp)...



◀ Auto Select

Causes the distribution amplifier outputs to be a reclocked copy of the signal at any input where a signal has been detected. If both or neither input has a signal then the selected input is not changed.

*Note that if one of the two inputs is lost the unit will automatically select the valid input if the Input Select function is set to **Auto Select**.*

◀ Input 1 (Input 1)

Forces the distribution amplifier outputs to be a reclocked copy of the signal at input 1.

◀ Input 2 (Input 2)

Forces the distribution amplifier outputs to be a reclocked copy of the signal at input 2.

◀ GPI I/P 1 Level (-2 option)

Selects between input 1 and input 2 according to the status of GPI port 1.

N.B. This option will only be selectable if GPI 1 is configured as an input.

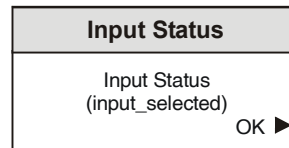
◀ GPI I/P 2 Level (-2 option)

Selects between input 1 and input 2 according to the status of GPI port 2.

N.B. This option will only be selectable if GPI 1 is configured as an input.

◀ Input Status

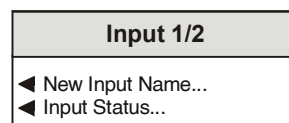
Displays which input is currently being reclocked and copied to the distribution amplifier outputs.



Select OK to return to the I/P (D/A) menu.

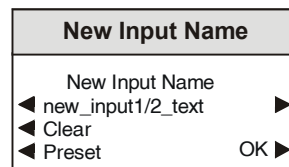
◀ Input 1/2...

This menu allows the ASCII label to be assigned to the signal at input 1/2 and the Input status to be displayed.



◀ New Input Name

The ASCII label to be assigned to the signal at input 1/2 is entered here. Turning the spinwheel on the control panel will scroll through the characters and pressing the upper right hand button will select that character and move on to the next character position.



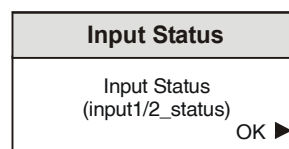
◀ Clear

This will clear any string entered.

◀ Preset

This will also clear any string entered and return to the default name.

◀ Input Status



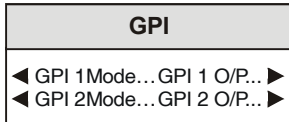
This shows the category of error for Input 1/2—either Status :Ok or No SIGNAL

Select OK to return to the Input menu.

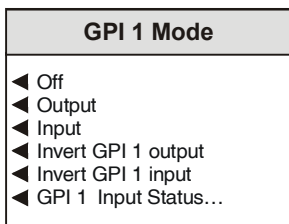
◀ **GPI...**

These menus allow the user to configure the module's 2 General Purpose Interface ports for control or reporting.

Note that for the IQMMX2-1A version the single GPI connector is assigned the GPI 2 Mode functions.



◀ **GPI 1 Mode (-2 versions only)**



◀ **Off**

This will inactivate the port and configure it to a high impedance state.

◀ **Output**

This will configure the port as an output, the state of which will reflect the state of any of the reporting parameters that have been enabled for it. (see GPI 1 Output Menu)

◀ **Input**

This will configure the port as an input, the state of which will determine which of the two signal inputs will be reclocked and copied to the distribution amplifier outputs

◀ **Invert GPI 1 Output**

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

Selecting the option will give the opposite behaviour

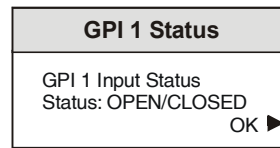
◀ **Invert GPI 1 Input**

If this option is *not* selected then a **CLOSED** contact across the GPI port will cause Input 2 to be routed to the outputs and an **OPEN** contact will select Input 1.

Selecting the option will give the opposite behaviour

◀ **GPI 1 Input Status**

Displays whether an open or closed contact is currently detected across port GPI 1.



This shows either OPEN or CLOSED. This display is only valid if GPI 1 is configured as INPUT or OFF.

◀ **GPI 2 Mode**

Note that for the IQMMX2-1A version the single GPI connector is assigned the GPI 2 Mode functions.

GPI 2 Mode
◀ Off
◀ Output
◀ Input
◀ Invert GPI 2 output
◀ Invert GPI 2 input
◀ GPI 2 Input Status...

◀ **Off**

This will inactivate the port and configure it to a high impedance state.

◀ **Output**

This will configure the port as an output, the state of which will reflect the state of any of the reporting parameters that have been enabled for it. (see GPI 2 Output Menu)

◀ **Input**

This will configure the port as an input, the state of which will determine which of the two signal inputs will be reclocked and copied to the distribution amplifier outputs

◀ **Invert GPI 2 Output**

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

◀ **Invert GPI 2 Input**

If this option is *not* selected then a **CLOSED** contact across the GPI port will cause Input 2 to be routed to the outputs and an **OPEN** contact will select Input 1.

◀ **GPI 2 Input Status**

GPI 2 Status
GPI 2 Input Status Status: OPEN/CLOSED OK ▶

Displays whether an open or closed contact is currently detected across port GPI 2. This shows either OPEN or CLOSED. This display is only valid if GPI 1 is configured as INPUT or OFF.

◀ **GPI 1/2 Output**

GPI 1 Output	GPI 2 Output
◀ Input 1 Fail ◀ Input 2 Fail ◀ Either Input Fail	◀ Input 1 Fail ◀ Input 2 Fail ◀ Either Input Fail

These menus determine which error conditions will trigger a change in state of port GPI 1 when it is configured as an output. Any number of the errors may be selected and the state of the port will be a logical OR of all the errors enabled.

The categories are:

◀ **Input 1 Fail**

Loss of signal on input 1

◀ **Input 2 Fail**

Loss of signal on input 1

◀ **Either Input Fail**

Loss of signal on input 1 or input 2

◀ Setup...

Selecting this item reveals a sub-menu that allows the following settings to be made:

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

◀ Logging

Selecting the Logging submenu will display the error category. This may be selected to enable the generation of log messages from the corresponding error event

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 can be made available to such a device.

◀ Log Input Loss

Logging
Log Input Loss

When activated the loss of input signal is issued to the logging device.

◀ Memories

This memory allows the user to save and retrieve the configuration of the module from one of 4 configuration memories.

Memories
◀ Save To...
◀ Retrieve...
◀ Default Config.

◀ Save To...

Save To
◀ Mem #1
◀ Mem #2
◀ Mem #3
◀ Mem #4

This menu displays a list of the 4 locally stored configuration memories. Selecting one of these causes the current state of all the control parameters of the module to be saved to that configuration memory.

N.B. saving to one of the configuration memories will cause any parameter settings stored in that memory to be lost.

◀ Retrieve...

Retrieve
◀ Mem #1
◀ Mem #2
◀ Mem #3
◀ Mem #4

This menu displays a list of the 4 locally stored configuration memories. Selecting one of these causes all of the control parameters of the module to be set from the selected memory.

N.B. Loading from one of the configuration memories will cause all of the current parameter settings to be lost.

◀ Default Config

This option restores the factory default configuration to the unit. Contents of the memories not changed.

N.B. Restoring the default configuration will cause all of the current parameter settings to be lost.

◀ Software Version

Selecting this item reveals a display showing the version of the software fitted in the unit.

Software Version	
Version x.x.x	OK ▶

Select OK to return to the Setup Menu.

◀ Serial No

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

Serial No	
Serial No x.x.x	OK ▶

Select OK to return to the Setup Menu.

◀ Restart

This menu allows the unit to be reset remotely.

N.B: Restarting the unit will take a few seconds and will result in an interruption to the distribution amplifier outputs.

