Innovation in the
Multi-Screen World

User Instruction Manual

IQGPI02

General Purpose Interface Single Width Module

Contents

1. Introduction

1.1 Module Description

The IQGPI02 is a configurable control module for external devices and all RollCall™ compatible products.

The module uses the latest Snell intelligent control software developed from the RollPod technology. This enables the GPI to become a central controller for the most demanding network configuration.

GPIs can be assigned to RollCall™ commands as before, but now with the aid of a PC program, the GPI can interact with the RollCall network environment. This provides interactivity between external devices and other Snell products.

All IQGPI modules are configured by means of the RollPod Designer application; however, if the RollPod Designer cannot offer the functionality required by the IQGPI, its configuration can be customized by Snell.

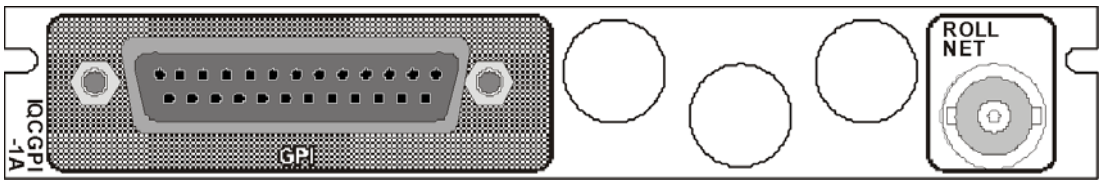
1.2 Order Codes

The following product order codes are covered by this manual.

IQGPI02-1A 12 GPIs, GPI to RollCall Translator (Balanced) Single Width Module.

1.3 Rear Panel View

IQGPI02-1A



1.4 Enclosures

The IQGPI02 module can only be fitted into ‘A’ style enclosures, shown below

Enclosure order codes IQH3B-S-0, IQH3B-S-P

Enclosure order code IQH1A-S-P

Enclosure order codes IQH3A-S-0, IQH3A-S-P

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

Enclosure order code IQH1A-S-P

1.5 Features

The IQGPI02 provides the following features:

- 12 port versions offer 11 optically isolated O-interfaces and one non-isolated O-interface
- Direct connection to the RollCall™ network
- Control products on the RollCall™ network via external events, or vice-versa
- Customizable solution allows programming of multiple events from a single trigger
- Outputs can drive relays or LEDs
- 200 mA, 5 V power supply available on connector

2. Technical Specification

Inputs	
GPI Optically Isolated - Balanced	12 via 25-way, D-type, 11 floating and 1 ground referenced
Outputs	
GPI	
User Power Supply	via 25-way D-type 200 mA, 5 V foldback protected
Communication	
RollNet	via BNC connector
Indicators	
PSU Overload	
Outputs	
Voltage Isolation	Floating GPIs only 2000 VAC
Sink Current (Output)	< 70 mA
Output Voltage	2.1 V at 50 mA typ., and 1 V at 10 mA typ.
Power Source	
Voltage	5 V ± 0.5 V
Maximum Current	150 mA foldback protected
Maximum Load	short-circuit
Power Consumption	
Module Power Consumption	3 W max.
EMC Performance Information	
Environment	Commercial and light industrial E2
Peak Mains Inrush Current following a five-second Mains Interruption	No mains input
PerformanceInformation	No performance degradations or cable length limitations

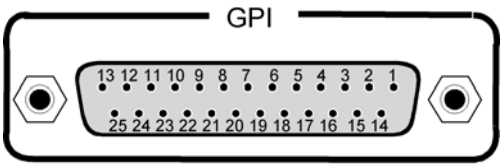
3. Connections

The IQGPI02 is an interface between a control panel and RollCall. The module controls a RollNet network, enabling access with an array of push-buttons that provide a customized user interface.

3.1 Balanced Connector

The balanced versions (IQGPI02) have 11 balanced and one unbalanced interface configurable to input or output.

A female 25-way, D-type connector interface is provided. The balanced version compatible with the previous version of the GPI.



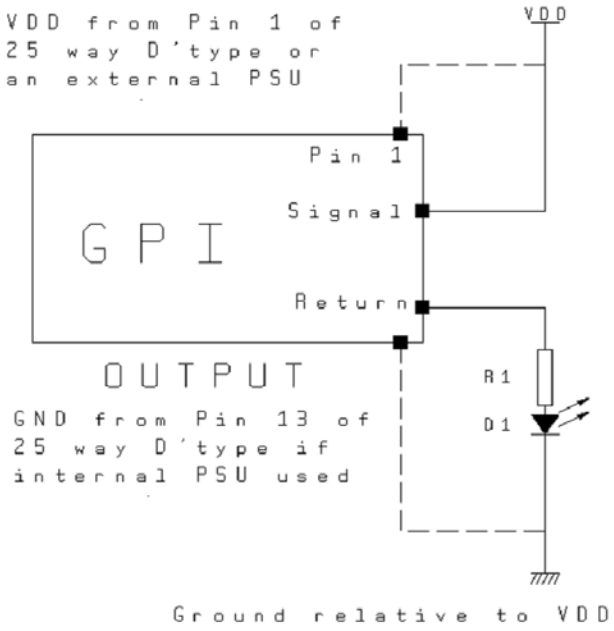
Pin	Pin	Name	Description
1		VPP	Positive Power Supply
	14	RET0	Return 0
2		SIG0	Signal 0
	15	RET1	Return 1
3		SIG1	Signal 1
	16	RET2	Return 2
4		SIG2	Signal 2
	17	RET3	Return 3
5		SIG3	Signal 3
	18	RET4	Return 4
6		SIG4	Signal 4
	19	RET5	Return 5
7		SIG5	Signal 5
	20	RET6	Return 6
8		SIG6	Signal 6
	21	RET7	Return 7
9		SIG7	Signal 7
	22	RET8	Return 8
10		SIG8	Signal 8
	23	RET9	Return 9
11		SIG9	Signal 9
	24	RET10	Return 10
12		SIG10	Signal 10
	25	SIG11	Signal 11, unbalanced
13		Ground	Ground

Note: The unbalanced/non-isolated GPI/O port, for example the 12th port (Signal 11), are not floating and have the return grounded on the module. Therefore, only example 2 is suitable for this port. If an external PSU is used with unbalanced or non-isolated ports, the external PSU ground should be common with module ground (pin 13).

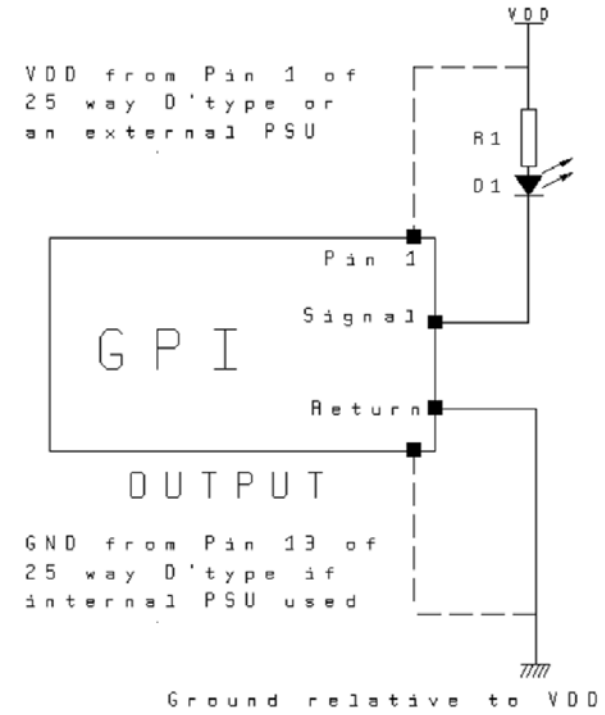
3.2 External Circuit Connections

The following diagrams are examples of external circuit connections for a GPI port configured as output:

Example 1

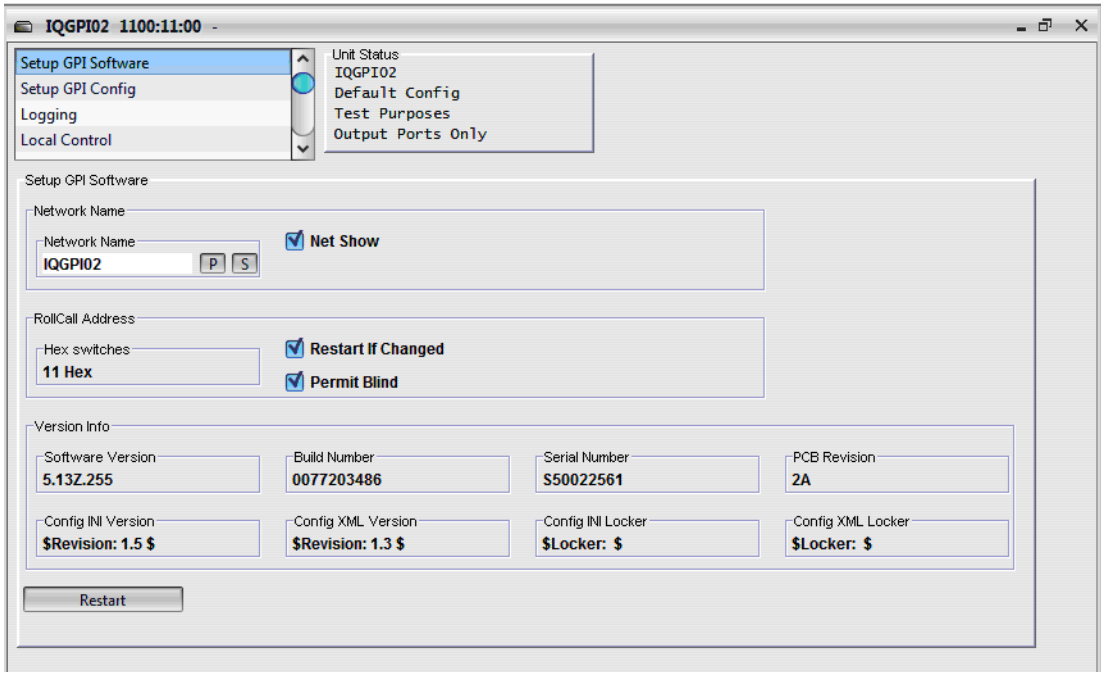


Example 2



4. RollCall Templates

4.1 Setup GPI Software



4.1.1 Network Name

The edit string sets the name of the IQGPI as seen from a RollCall network browser such as shoebox or RollCall PC Control Panel.

To change the name:

Type the new name in the text area and then select (return).

P (Preset) returns to the default name.

4.1.2 Net Show

When selected, the module will appear in the Module List of other control panels.

If the **Net Show** checkbox is cleared, the IQGPI will continue to operate normally, but it will be hidden in network browsers. From a RollCall PC a connection may be made to a hidden device by entering the address manually, as opposed to browsing.

4.1.3 RollCall Address

There is a display showing the current position of the hex switches that defines the RollCall address of the IQGPI. By default, the **Restart if Changed** checkbox is selected, which means that the module will automatically restart and use the new address when the hex switches are moved.

4.1.4 Permit Blind

Blind Control is the ability to control a unit without a connection. Active Front Panels and RollCall PC programs use a RollCall connection to control a module. RollTrack (used for setting, for example, audio delay times to track video delays) does not use a connection, but just sets the delay.

If a chassis fitted with modules which will be controlled by Blind Control (RollTrack and some third party remote control systems) then Permit Blind control must be enabled.

If Blind Control is not be used then Permit Blind control may be disabled, giving protection against incorrectly set-up RollTrack source modules.

4.1.5 Restart

Selecting this function will re-boot the module with any changes incorporated. This provides an easier alternative to a power-down power-up operation.

4.1.6 Version Info

The serial number, software version, and software build number of the unit is shown here. Also shown is version information about the configuration.

4.1.7 Software Version

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

4.1.8 Serial Number

This item shows the serial number of the module.

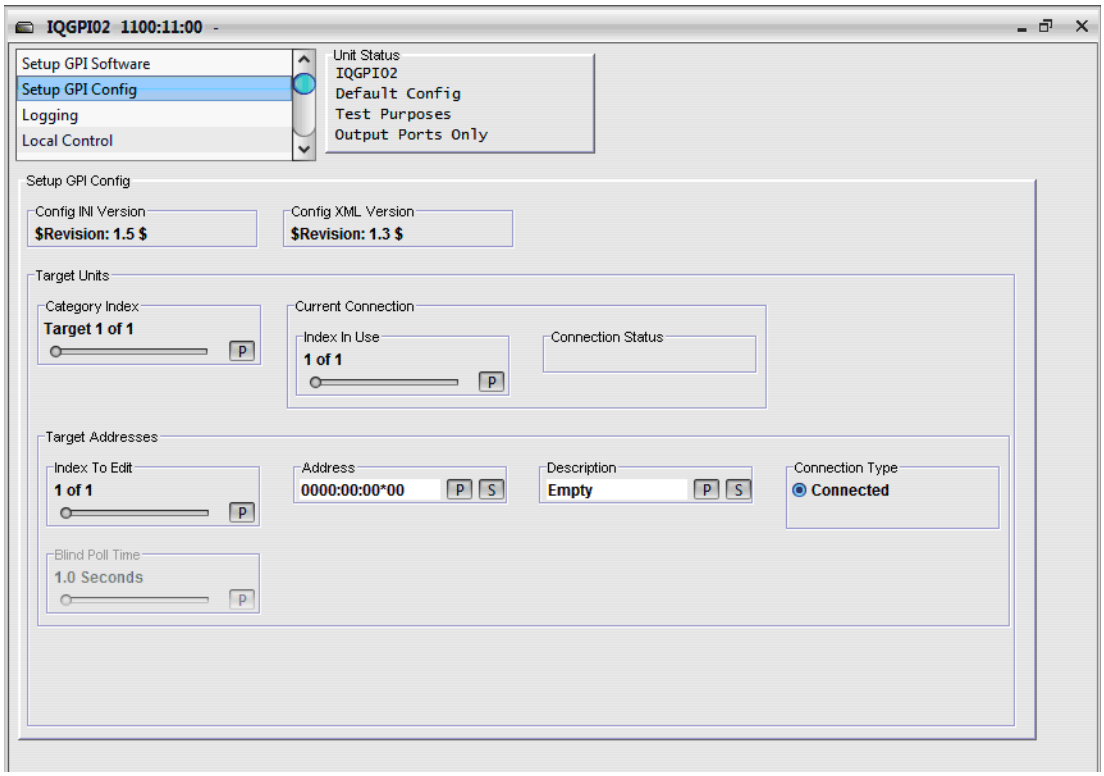
4.1.9 Build Number

This will indicate the factory build number. This number defines all parameters of the unit (software versions, build level etc.) for identification purposes.

4.1.10 Config INI Version / Config XML Version / Config INI Locker / Config XML Locker

These show the version of the user configurations.

4.2 Setup GPI Config



There are a number of controls and displays, which all apply to one of the IQGPI's "targets" (the units being controlled or monitored by the IQGPI). Depending the method used to develop the configuration and on the task to be accomplished the GPI cards RollCall template will show different controls and menus available.

In this example of a customised config, there is a Target Index control scrollbar which allows the selection of one of the targets at a time. All the other controls and displays then apply to the selected target.

For example, the configuration shown above has 11 targets, numbered 0 to 11. The target index is currently selecting Target 7. Therefore the target controls Address, Connection Status etc. currently apply only to this target.

In this case, a description has been assigned to the target, Ch2 BSFR Shuffler 1 and the current status is Connection OK to address 0000:12:07. As the target index is scrolled to the other values, the entry fields and status will be seen for each target.

Controls that apply to the currently selected target

4.2.1 Address

This edit string sets the RollCall address of the target unit, in the form "nnnn:uu:pp" where nnnn is the network route, or "0000" in a simple non-bridged network; uu is the unit address, normally set by hex switches; pp is the port address, which corresponds to the slot number in modular systems, or "00" for non-modular products.

To change the address, type the new address in the text area and then click **S**.

P (Preset) returns to the default address.

4.2.2 Description

This edit string has no effect on the communications, but allows the user to differentiate the targets.

4.2.3 Connection Type

There are 2 methods of connecting to a target: true connected or blind polled. True connected is preferred, because it provides immediate updates to the IQGPI when a control is changed from a different panel, unit card edge controls, or in response to other events.

In current IQGPI versions, connected control is the only mode supported. The only benefit of the blind control mode, (currently not supported in the IQGPI), is that this does not take a true control session, which allows other control panels to access single-session units such as IQ modules at the same time as the IQGPI is connected. This mode will be enabled in a future IQGPI software release.

4.2.4 Blind Poll Time

This control is ignored when in connected control mode. In Blind control mode, it affects the rate at which the IQGPI polls the target to check for changed values. This affects the speed of updates appearing on the IQGPI when changed externally, e.g. on the unit card edge controls.

Note: This has no effect on the speed of actioning a control made on the IQGPI, which always occurs immediately in either connected or blind control mode.

4.2.5 Connection Status

This display shows a short text message describing the current (live) status of the IQGPI connection to this target.

The possible values and their meanings are listed here:

- **Connection OK:** The IQGPI has a live true connection to the target unit, with no errors detected. In this state, the IQGPI should action changes made immediately, and also immediately responds to any changes occurring on the target unit.
- **Blind Poll OK:** The IQGPI has a live blind-polled connection to the target unit, with no errors detected. In this state, the IQGPI should action changes made immediately, and also responds to any changes occurring on the target unit within the configured blind poll time.
- **Bad Address:** The IQGPI is not attempting to connect to this target, because the address entered is invalid, e.g. all zeros. The IQGPI will not try communication until a valid address is entered.
- **Conn. Fail:** Timeout: The IQGPI is not connected to the target unit, and connection attempts time out. This indicates either a wrong address entered, or that the target unit is not connected to the network. The IQGPI will retry to connect indefinitely.

- **Conn. Fail:** Busy: The IQGPI is not connected to the target unit because the target returned busy, indicating that it had reached the maximum allowed number of controllers, e.g. 1 controller on a single session IQ modular system. The IQGPI will retry to connect indefinitely, so as soon as the existing control panel is disconnected from the target, the IQGPI will connect.
- **Connection Failed:** The IQGPI is not connected to the target unit, for an unknown reason, (i.e. neither time out nor Busy). The IQGPI will retry to connect indefinitely.
- **Blind Poll Failed:** The IQGPI's attempt at a blind-polled connection to this target has not been successful. The IQGPI will retry indefinitely.
- **Bad Config:** The currently loaded user configuration is not valid, so no communication will be attempted until a valid config is downloaded.
- **Trying... :** The IQGPI is making the first attempt at establishing communications with the target. If the most recent attempt fails, then an error will be reported, e.g. "Conn. Fail: Busy", replacing the "Trying..." message.

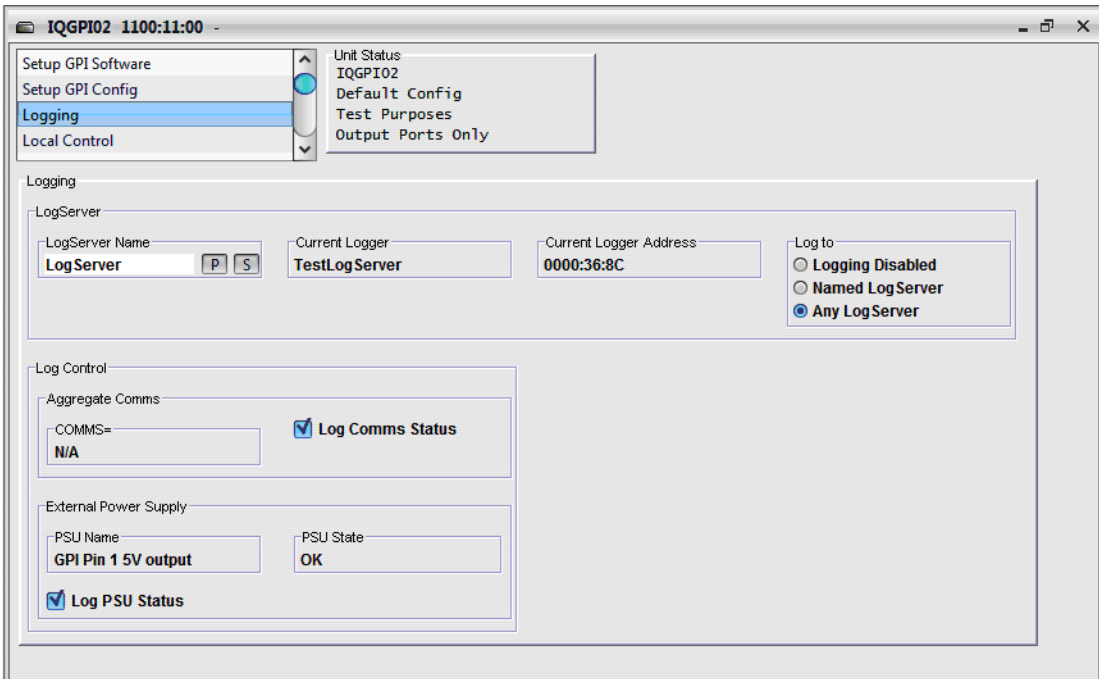
Note: The IQGPI will continue to try, even if the message "Trying..." is no longer displayed. Therefore the "Trying..." message should only occur transiently.

- **Initializing:** The IQGPI has established a successful communication with the target, and is retrieving the current values of all controls required for the configuration. This message should only occur transiently, being replaced with the appropriate OK or failure message.
- **Remote Disconnected:** The IQGPI did have a valid true connection to the target, but this was terminated by the target unit. (This can occur, for example, when a Supervisor-level RollCall PC Control Panel remotely disconnects the current controller to allow itself to control a single-session unit). This message should only occur transiently, being replaced with the appropriate OK or failure message as the IQGPI would retry the connection indefinitely.

Setup Config - Config-specific controls

Some configurations require additional setup controls that are global, i.e. are not affected by the target index selection.

4.3 Logging



4.3.1 LogServer Name

The Logging Server to be used may be named by editing the text string in the text window.

4.3.2 Current Logger / Current Logger Address

Displays the name and address of the current logger.

4.3.3 Log to

Use the radio buttons to specify one of the following options:

- **Logging Disabled:** If selected, the logging functions will be disabled.
- **Named LogServer:** If this item is checked Logging information will only be sent to the server named in the name window. Note: matching of the name is case sensitive.
- **Any LogServer:** If this item is checked Logging information will be sent to any Logger on the system. It is suggested that if there is only one server on the system, this option should be chosen.

4.3.4 Log Comms Status

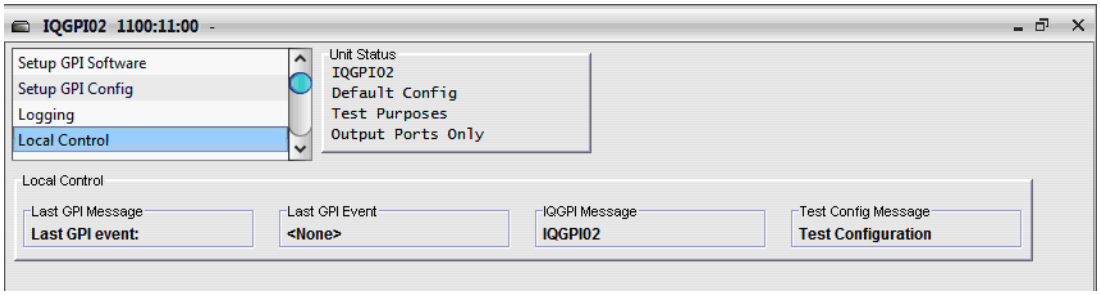
Select this option to log communication status.

4.3.5 External Power Supply

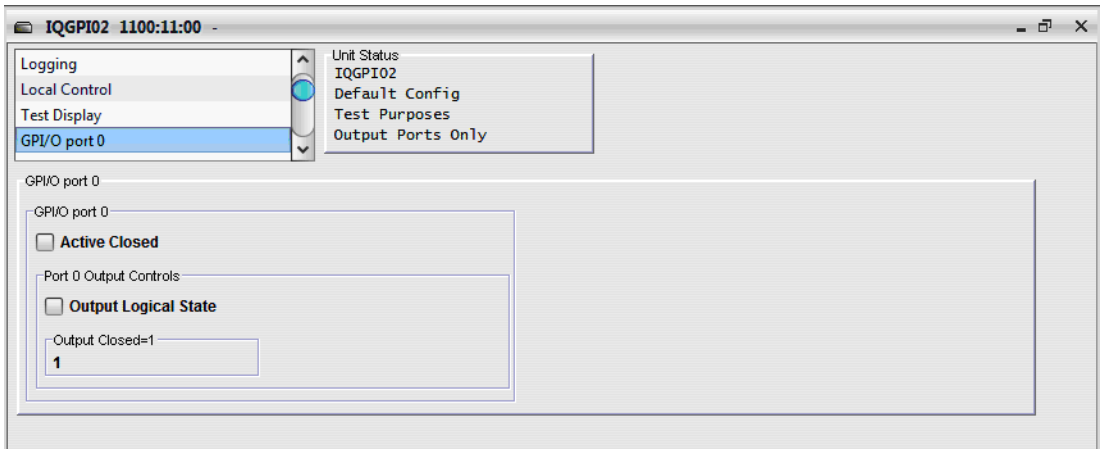
Select this option to log the status of the external power supply.

4.4 Local Control

The **Local Control** screen is completely defined by the user configuration. It typically includes all the controls and pages which may appear on the IQCGPI. The remote user may therefore action any control with the same effect as if the control was made locally on the IQCGPI.



4.5 GPI/O Port



This screen is an example of a port setup.

4.5.1 Active Closed

This item toggles the sense of the GPI port input or output.

Port Configured as an Input

If the **Active Closed** is **enabled** the port is logically active when current flows between the signal and return pins and the port is logically inactive if no current flows.

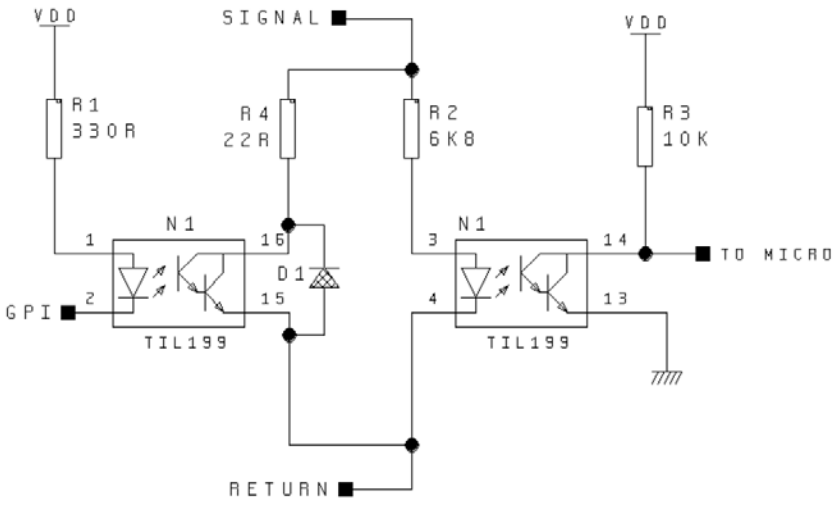
In circuit examples 1 and 2, below, current flows when the external switch SW1 is closed and the port will be active. When SW1 is open the port will be inactive.

If the **Active Closed** is **disabled** the sense is reversed. The port is logically active when no current flows between the signal and the return pins and the port is logically inactive when current flows..

Port Config	Active Closed Function	Logically Active	Logically Inactive
Output	Enabled	Pins Closed	Pins Open
	Disabled	Pins Open	Pins Closed

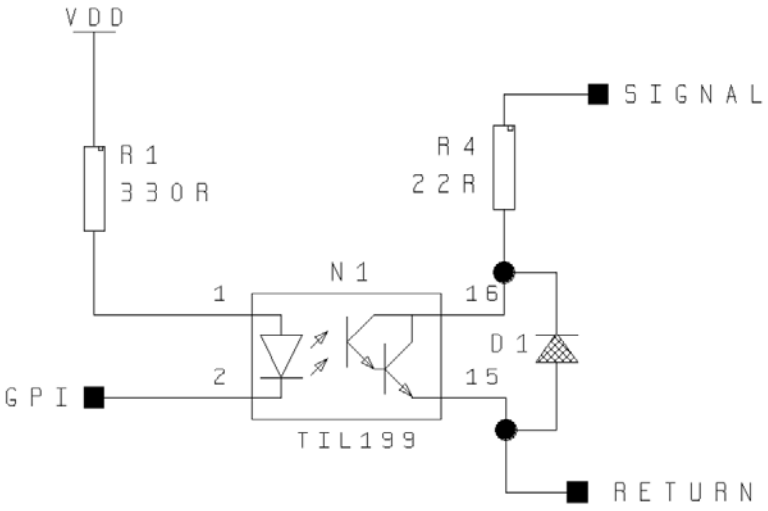
4.6 Internal Circuit Implementations

4.6.1 GPI Linout Circuit



4.6.2 GPI Output Circuit

Iout max. = 70 mA, Vabs max. = 19 V, Vabs min. = -5 V



4.6.3 Connector Power Generation Circuit