Utah Scientific

Universal GPIO

Setup and Operation Guide

Universal GPIO

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4750 Wiley Post Way, Suite 150
Salt Lake City, Utah 84116-2878 U.S.A.

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- EN55022:1994+A1&A2

Immunity

- EN55024:1998
- EN61000-3-2
- EN61000-3-3

Safety

- IEC 60950-1:2001 /EN 60950-1:2001

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- Low Voltage Electrical Directive 72/23/EEC

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CE

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Universal GPIO

Universal GPIO is designed to provide an Ethernet interface point for triggering opto-isolated inputs and controlling relay closures. The box provides 16 GPIs and 16 GPOs located on the front of the unit.

The system contains its own built-in browser and in the setup process, the operator uses an IP address to browse to the GPIO. Configuration then takes place when the utility's own web page is opened.

The ethernet is used to connect and configure. The purpose of the GPIO is to offer additional GPI's and GPO's to the router control system. Configuration can allow GPI's to trigger routers in a system, in addition to GPO's to respond to router triggers.

A GPI input will cause a router switch based on how it is configured.

The inputs and outputs are labeled on the front of the unit; 16 outputs placed on the left side of the box and 16 inputs placed on the right side of the box. The ethernet and serial connections are located at the rear of the box, with the serial connection doubling as a debug port as well.

The active light indicates the presence of GPIO activity.

Note: *The GPI's contained within the UDS are designed as a simple closure to trigger the GPIO's. Put simply, an input is triggered when two pins are shorted together on the actual GPI input. In this way, GPI's can be directly wired to relay GPO's from other devices. The bottom pin of the GPI is an internal ground, while the top pin is used to trigger the GPI when grounded (externally, or to the bottom pin.)*

The Universal GPIO connection box is designed to provide a Ethernet based interface point for triggering opto-isolated inputs and controlling relay closure outputs. The box provides sixteen GPIs and sixteen GPOs located at the rear of the unit.

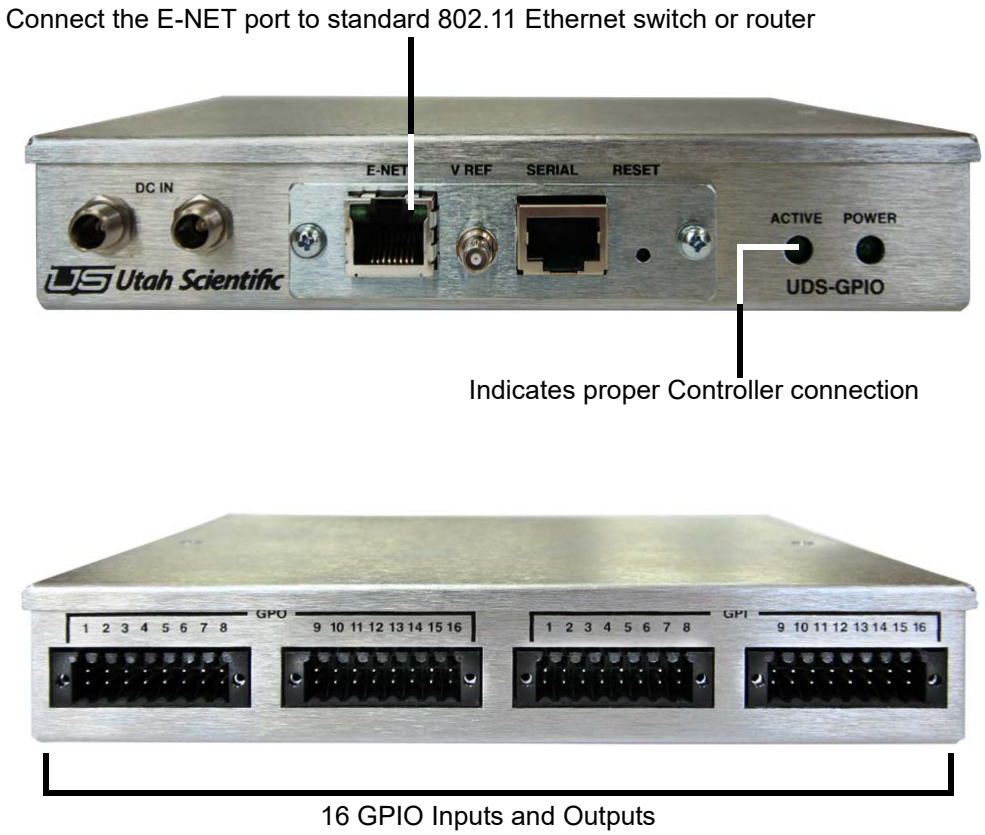

Figure 1-1.

All 16 inputs (GPI's) are simple dry contact closures and require no voltage from a triggering device. The voltage for these inputs is applied within the GPIO unit itself.

The Universal GPIO is programmable from the Control Applet for mapping the individual contacts to specific source/destination combinations.

GPIO Applet

The GPIO applet is found by browsing to the device across the network using the default address (shown).

- 192.168.5.181

Double-click the GPIO applet icon (below).

Figure 1-2.

When the Router icons appears, select “GPIO Configuration”.

Figure 1-3.

Note: *You will only be able to connect if the browser window indicates “Applet ready for login.”*

Enter Username “admin” (default) - *in the username entry box*

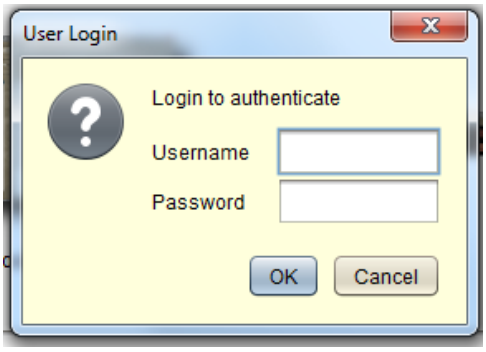

Figure 1-4.

Enter Password “admin” (default) - *in the password entry box*

The following window (below) will appear once you have logged in. Use the radio buttons in the Panel Configuration section to navigate through the configuration screens; *System*, *Network* and *Encoding*.

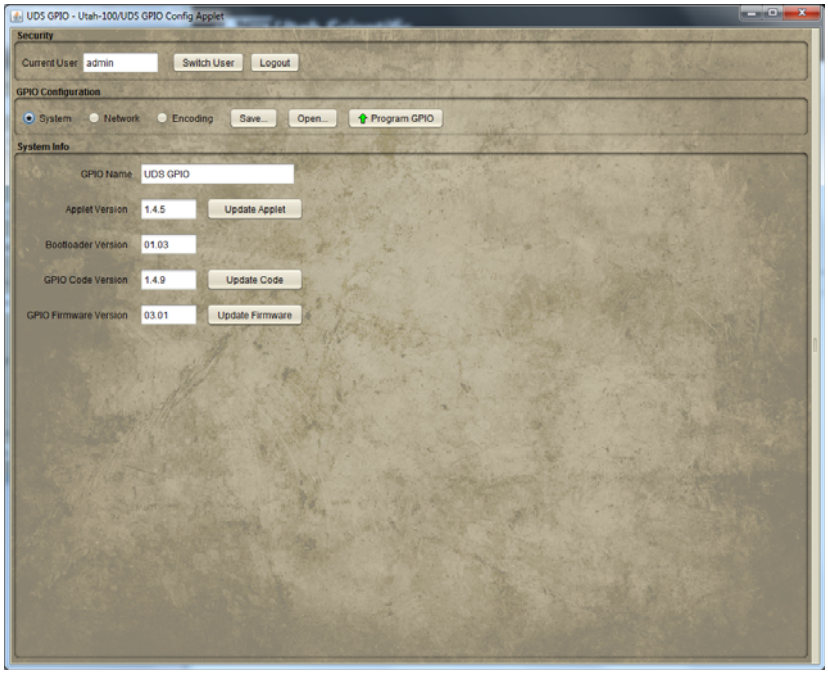

Figure 1-5.

System

When selected, the **System** radio button displays the current panel configuration detail (System Info area).

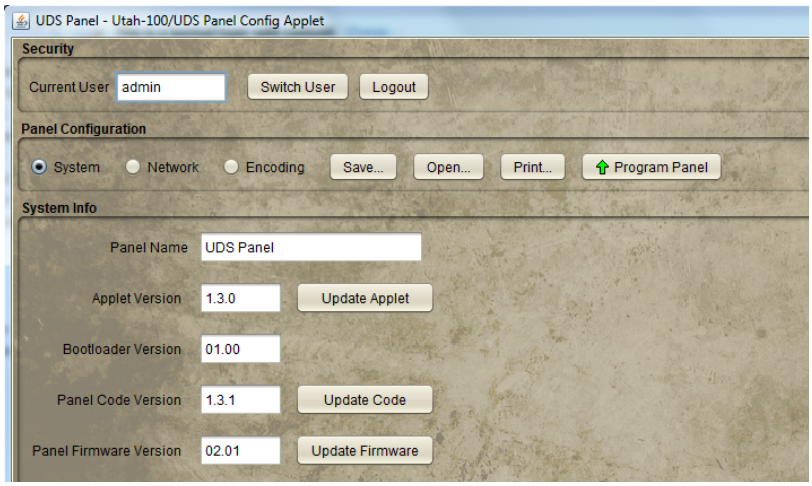

Figure 1-6.

You can edit the System Name, view the system version number, and update system components from the System Info screen.

Network

This is the initial network setup screen. Indicate the correct IP configuration detail at this location.

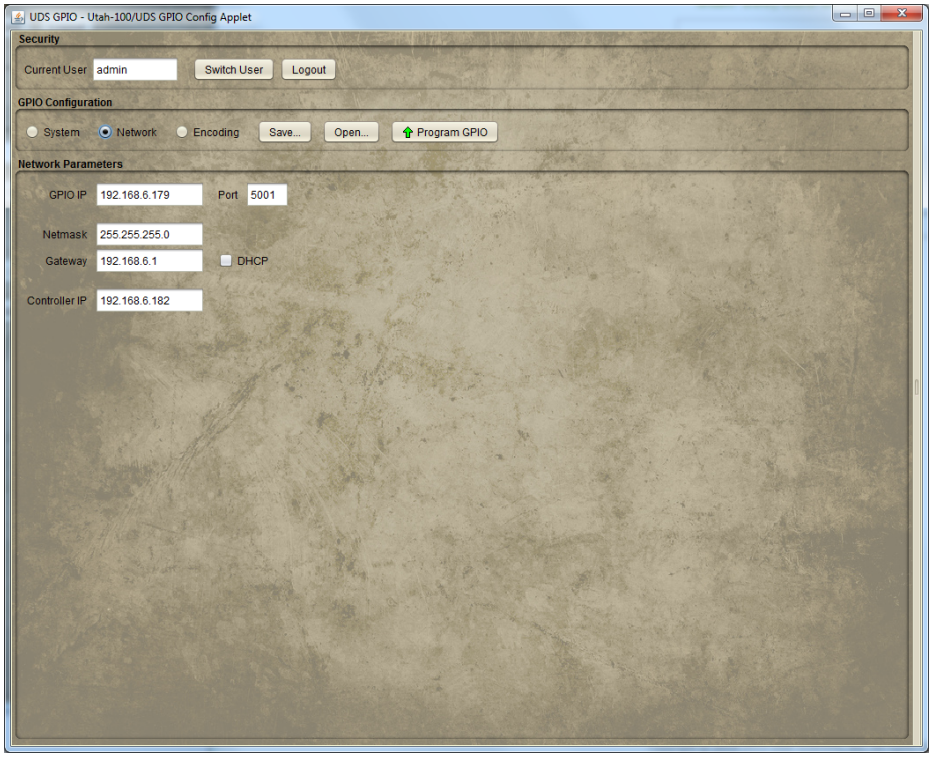

Figure 1-7.

Network Parameters

Panel ID and address configuration is entered at the top of the display. 5001 is the Port default.

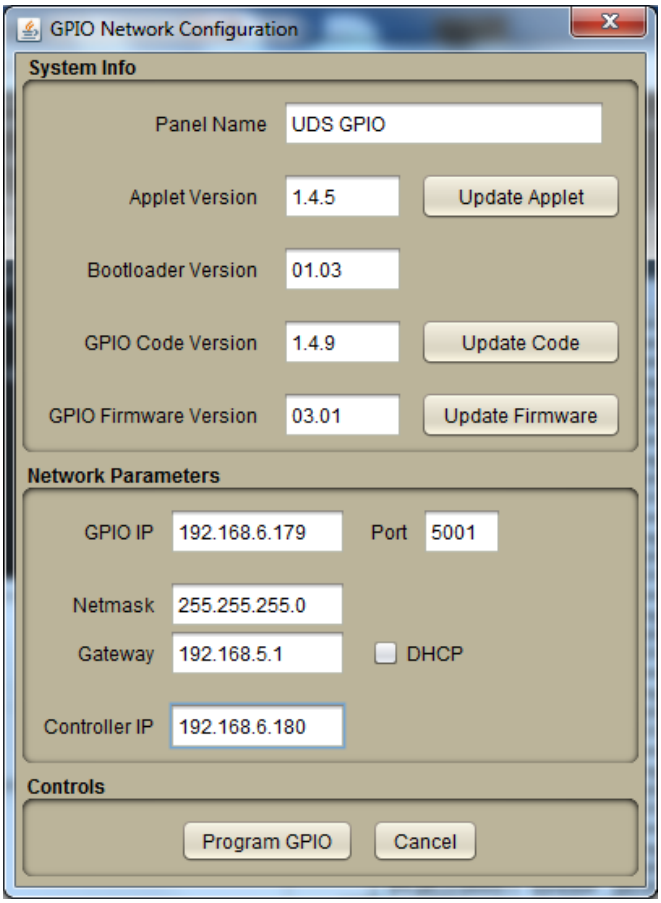

Figure 1-8.

When indicated, the DHCP checkbox will allow the program to complete its own designation.

Once the above steps are complete, the router can be placed on the target network and configured as needed.

Encoding

Input Designation

Sources and Destinations to be controlled by each GPI are dragged from their scrolling columns at right side of the dialog window to their corresponding columns in the input area.

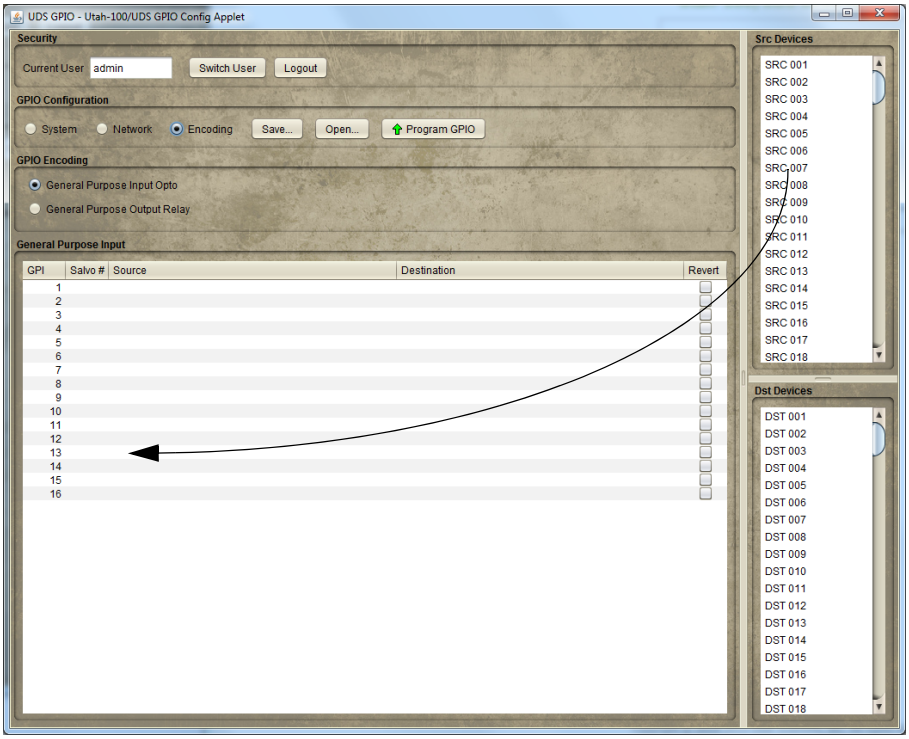

Figure 1-9.

You also have the ability to assign salvos instead of Source/Destination, though not both at the same time.

Note: *Salvos are configured in the router controller software.*

Revert

Revert applies to a 'device' capable of holding the GPI closed until a desired time. When a device is connected to a unit's GPI input and *modified* in any way, the previous position will revert back *to* when the GPI is released.

Output Designation

To assign GPOs (relay outputs) to desired Source/Destination combinations, drag them to the desired GPO position.

Sources and Destinations to be controlled are dragged from their scrolling columns at right side of the dialog window to their corresponding columns in the output area.

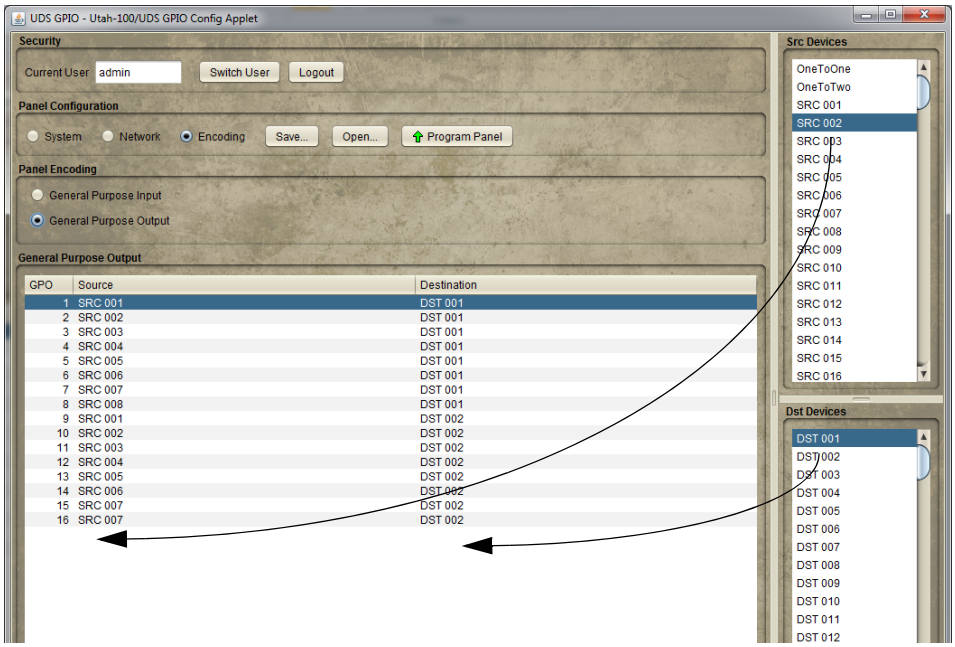

Figure 1-10.

Save and Program

The Save button function saves the configuration to a uniquely named file in a specified directory. This is useful if multiple versions of the panel configuration are needed.

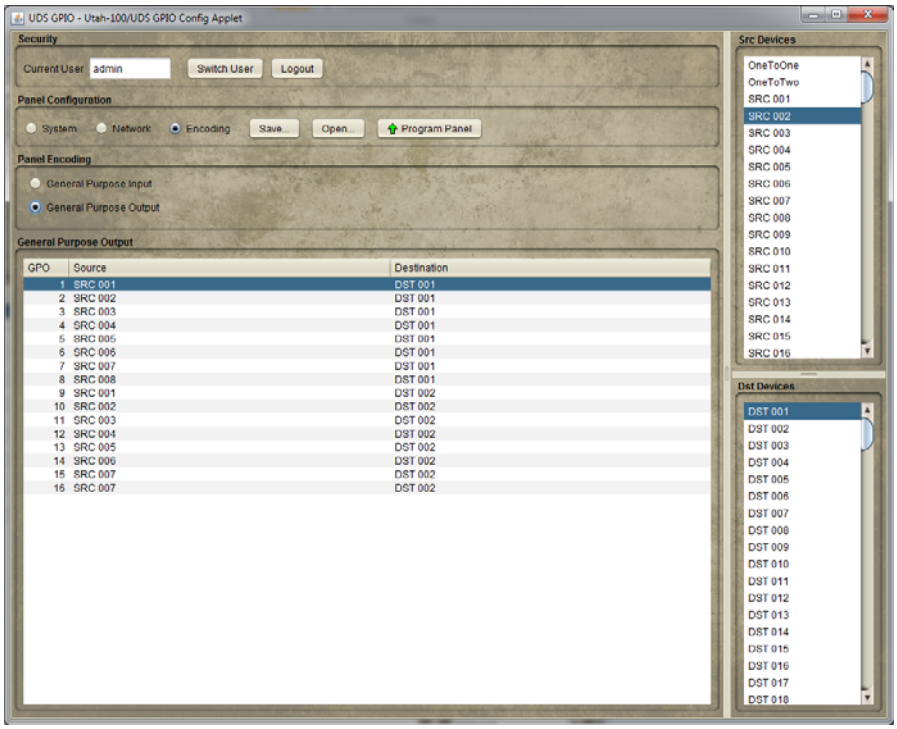

Figure 1-11.

Program GPIO sends the configuration to the actual device.

A
active light 1

D
debug port 1
DHCP checkbox 7

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