Universal Switching Corporation

OPERATION AND INSTALLATION MANUAL

RouteWarePRO Version 2.4

Rev B

Routing and Control GUI for Universal Switching Products

State-of-the-Art Switching Solutions

Warranty

Universal Switching Corporation warrants that its software and firmware designated by Universal Switching Corporation for use with an instrument will execute its programming instructions when properly installed on that instrument. Universal Switching Corporation does not warrant that the operation of the instrument, or software, or firmware will be uninterrupted or error-free.

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1. Getting Started

This section provides instructions for first time setup or updating of **RouteWarePRO** software.

1.1. Installation Requirements

RoutWarePRO 2.4.1 requires the following minimum system specifications to install.

- Administrator level user access (necessary for install/uninstall only)

- Microsoft Windows XP, 2000, or NT 4 Service Pack 6

- Pentium 200 MHz or equivalent (Pentium III recommended)

- 800x600 minimum screen resolution

- 260 MBytes available HDD space

- Keyboard and mouse

- GPIB, Ethernet, or serial port (RS232, 422, or 485)

1.2. First Time Installation

To install, insert the RouteWarePRO CD and follow the on-screen instructions. If the "Autorun" function is disabled, run Setup.exe from the root directory of the CD. The setup wizard walks you through the installation process.

For RouteWarePRO to operate there are two required runtimesthat must be present: LabVIEW runtime version 7 and NI-VISA runtime (3.3 or newer). If you already have adequate versions of these runtimes installed on the system, check the boxes for each one you do not want to install on the "**Required Runtime Files**" screen. You can always run them at a later time by selecting the links in the "Universal Switching Corporation" Start menu program's folder after installation.

While installing the runtime files, you may need to install support for your specific hardware (such as the NI488 interface, NI488220). Follow the prompts from the runtime installation wizard, or refer to your interface hardware documentation. The latest versions of the LabVIEW and NI-VISA runtimes are available from National Instruments (www.ni.com).

🖐 *NOTE: Be aware that the installation instructions for the above may require removal or upgrade of previous runtime versions that other applications may need.*

1.3. Update Installation

To update an existing installation of RouteWarePRO, follow the directions for a "First Time Installation." At the "Installation Destination Location" screen, point the location to the computer s current RoutWarePRO folder. Any existing Log or Configuration folder files are not changed, and the new version of RouteWarePRO automatically uses the computer's existing RouteWarePRO configuration.

If yo do not wish to overwrite the older version of RouteWarePRO on the computer, install the new version to a different location. The files in the older version's configuration folder have to be manually copied to the new one to use the existing configuration.

🖐 *NOTE: Though the RouteWarePRO installer is designed to preserve existing configuration files, back up the Configuration and Log folders in your current RouteWarePRO installation before upgrading.*

1.4. License Activation

RouteWarePRO utilizes an on-line activation service for managing software licenses. When running the program for the first time, it prompts you for the license key provided with the software and makes an attempt to activate the program over the Internet. The software operates for a trial period of 30 days without activation. The activation service automatically manages the available seat for a given license restricting the simultaneous activations to the quantity purchased.

The activation request is sent to the activation service through a secure Internet connection (SSL). This request includes the software license codes and the computer's 64-bit machine serial number and 32-bit machine disk identifier. The activation process is autonomous and never requests, collects. or transmits personal information. It does not scan hard drives, and none of the information collected can be used to identify individual hardware components.

1.5. Uninstallation

The uninstallation process removes all RouteWarePRO files installed by the setup program, including any files in the configuration that may have been edited since installation. Uninstalling also de-activates that license seat, making it available for installation onto another machine. It is recommended that backup of any customized configuration files is performed as well as verification of an active Internet connection before uninstalling RouteWarePRO.

To uninstall RouteWarePRO, open the Windows Control Panel and run "Add or Remove Programs" tool, or run the RouteWarePRO installer (if an installed version is detected, the RouteWarePRO install program initiates uninstall) from the installation CD. To uninstall LabVIEW or VISA runtimes, find "National Instruments Software" in the "Add or Remove Programs" tool.

> ✋ *NOTE: It is important that RouteWarePRO be uninstalled from machines that are no longer using the software. Since activation service keeps track of the license seats available, it needs to be updated over the Internet by the uninstall process to open an activation seat.*

1.6. Update Installation

To update **RouteWarePRO**, open the folder and drag the application to the location of the older version. You might want to preserve the older version by renaming it first. The above should be possible without any special rights to the system.

> ✋ *NOTE: Be aware that the installation instructions for the above might require the removal of previous versions that other applications might need.*

2. Program Set-up

Before beginning, take a moment to look in the **Configuration** folder located in the same folder as the application. Note that, among others, there is a text file called **"Panel List.txt"**. These ASCII text files control the appearance of the application. They are all "comma-delimited", i.e. the comma separates the fields and cannot be used as a part of them.

2.1. Configuration Folder

The "Configuration" folder contains all the files to configure the application to your specific needs. It contains sample "txt" files that can be copied and modified to change how the ASCII text files control the appearance of the application. They are all "comma-delimited" files.

2.1.1. The "Panel List" File

Within the Configuration folder, the file **"Panel List.txt"** is the main configuration file. The first line in the file is the title that appears at the top of the application. In this example "Universal Control Panel", but can be anything that might suit your specific switching application. A sample is shown below and is supplied with the software (Panel List.txt).

```
Universal Control Panel
TCPIP::10.100.1.49::7145::SOCKET,0,TCP/IP Default,Outputs Panel 1.txt,Inputs Panel 1.txt,ff00ff,00ff80
gpib0::20::instr,0,GPIB 20,Outputs Panel 1.txt,Inputs Panel 1.txt,,000000,ff8080
asrl1::instr,0,COM1,Outputs Panel 2.txt,Inputs Panel 2.txt,Modules Panel 2.txt,ffff00,8080ff
```

For each of the following lines, an entry appears in the panel list. If you are controlling only one unit, then you only need to define one line and delete the rest. The fields of each entry are:

- The VISA resource descriptor (see VISA resource section) of the Universal Switching product to be controlled by this panel.
  (Example: `TCPIP::10.100.1.49::7145::SOCKET`)

- If it's not on an RS-485 bus, a zero. If it does use RS-485, enter its address as set on the product's DIP switches and as displayed on the front panel when it starts up.

- The panel's title as displayed at the top. You can give this any name you want.
  (Example: `TCP/IP Default`)

- The name of a file (include the extension) in the Configuration folder that describes the panel's "Output Box" (see below). (Example: `Outputs Panel 1.txt`)

- The name of a file (include the extension) in the Configuration folder that describes the panel's "Input Box" (see below). (Example: `Inputs Panel 1.txt`)

- The name of a file (include the extension) in the Configuration folder that describes the panel's "Module Box" (see below), a number that corresponds to a valid module in the box or nothing (i.e. two commas) if the panel does not need one. In the examples above, there are no "modules" specified so there are only two commas. If a number is specified, a "Module Box" does not display and the number is used as the module operand in the relevant commands.

- The foreground color of the panel in HTML format (i.e. three pairs of hexadecimal digits representing the red, green and blue components). There is a reference chart in the back of this manual.

- The background color, also in HTML format. If the background is missing, 0 is assumed (black). If both the foreground and background are missing, white on black is assumed. There is a reference chart in the back of this manual.

✋ *Note: The colors used in the default file are meant to help demonstrate the product's abilities and in no way represent Universal Switching Corporation's taste in style.*

In the sample above, which is the "default" version that's supplied, note the following:

- "Panel 1" is connected to the host's Ethernet port (TCPIP) and the unit being controlled is at IP address `10.100.1.49` and at port `7145`, It has pink (`ff00ff`) text on a green (`00ff80`) background.

- "Panel 2" is connected to the host's GBIP interface at address 20. It has black (`000000`) text on an orange (`ff8080`) background.

- "Panel 3" is connected to the host's serial port (com1) that is <u>not</u> an RS-485 line.

The application expects to find each of the files (Outputs Panel 1.txt, Inputs Panel 1.txt, etc.) in the Configuration folder. You may use different names.

2.1.2. The "Panel" Files

Each panel has "boxes" in the configuration screen. The left one lists the names of the outputs; the center one lists the names of the inputs. The right one lists the modules.

Note that depending on how the Panel List looks, there may or may not be a module box. (Depending on the product's application, the addressing of the module may be done automatically by the product or may need to be explicitly addressed.) The title on the box and it's textual contents are controlled by its corresponding file as specified in the "Panel List.txt" file.

The format of the panel files is as follows:

- The first line is the title that appears for the box on the Configuration screen, and within the "Panel" selector box.

- The following lines list the contents of the box. The second line for zero, the third line for one, the fifth for two, etc. Note that zero is not valid for outputs, means "wild" or "any" for inputs and "ganged" for modules.

Below is an example of an "input" text file with the title "Inputs Panel 1", "wild" in the zero position followed by 16 inputs. The inputs can be replaced with device names or channels appropriate for your specific application. If the names are too long, they will not fit within the window provided. There can be as many or as few lines as you like, however if you select a line that's out of range, the product returns an error.

```
Inputs Panel 1
"Wild"
Input 001
Input 002
Input 003
Input 004
Input 005
Input 006
Input 007
Input 008
Input 009
Input 010
Input 011
Input 012
Input 013
Input 014
Input 015
Input 016
```

All the above-mentioned files in the Configuration folder can be edited with any text editor. It's important that the text editor does not maintain an exclusive lock on the file while the control application is trying to read it. The Notepad application that ships with Windows 2000 meets this requirement. It allows you to edit the file while the application can still read it. Remember that changes are not noticed by the control application until you save the changes.

> 🖐 *When you change panels, the application first re-reads the Panel List file, then, based on your selection, reads the two or three box files. It is at this point that you notice changes.*

2.1.3. Before Launching the Application

Before you launch the application, you might want to modify your files (especially the VISA resource field in the Panel List) to match your setup. Remember that you can edit them while the application is running and see the results by changing panels. For best results, verify that all products are powered and connected.

Note that the various ports on your host are "shared resources". When a process running on your host wants to access a resource, it may lock that resource for at least some of that access.

The HyperTerminal application that ships with Windows, for instance, maintains a lock on its serial port all the time that it's in the connected state. (When it's in the disconnected state, it releases the lock.)

The RouteWare application, on the other hand, locks the resource when it is actively sending a command and releases it as soon as the response arrives. (This is also true of the LabVIEW drivers for your Universal Switching Corporation products.) As a result, if an application like HyperTerminal is launched while the application is running, it may lock your resource and keep the application from sending commands until it is placed in the disconnected state.

Familiarize yourself with ways to make other processes that are using the resource release their locks. As a last resort, quit any process that refuses to play nicely and share the resources with the other processes.

2.2. Starting the Application

Upon starting the application you should see a window similar to the illustration shown below. It is the panel that you get with the files, as they are installed. If the Panel Selector resource is not configured properly, this screen only appears for a moment, then the application shows the Status screen displaying any error that occurred. It defaults to the "Choose" selection as shown prompting the user to select one of the "Panels" defined below it.
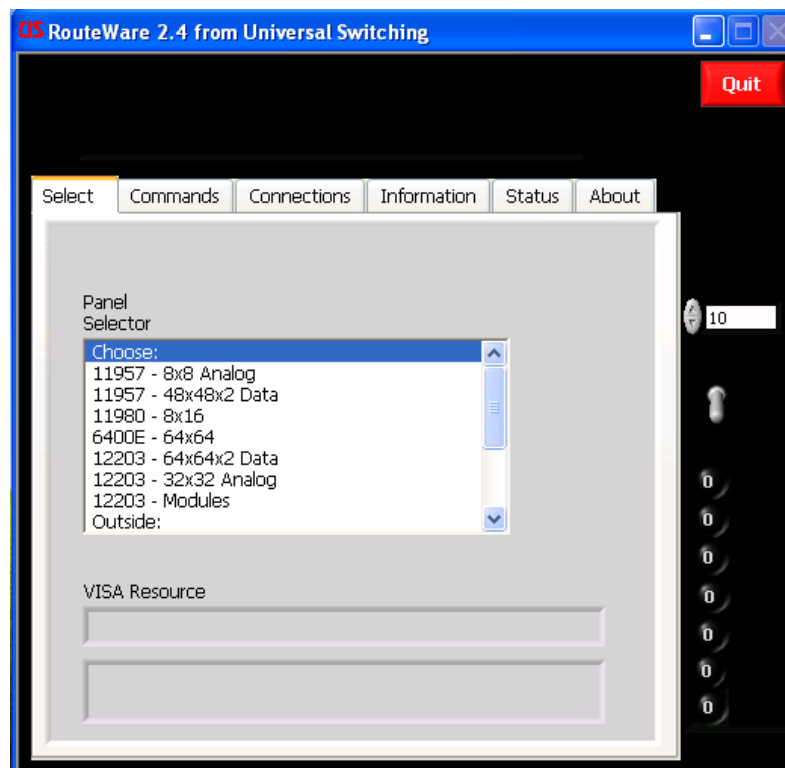
3. Tab Definitions

This section describes the features of the panel interface of the **RouteWarePRO** software. The title "RouteWare 2.4 Example" on top of the panel interface is derived from the "Panel List.txt" file and can be changed by the user. As shown below, the **RouteWarePRO** panel interface contains the following features:

- The **Select**, **Commands**, **Connections**, **Information**, **Status, About** screens. Each screen is explained in the following sub-section of this manual.

- The **QUIT** button releases resources and closes the application.

- The **Status Byte Register** indicators, displays the seven bits conditions. These indicators are explained in the **Status** screen section.

- The **Status Check Intrvl. (sec.)** control, let the user select the interval, in seconds, between updates.

- The **Logging** switch, when ON, an entry is made for each relevant command in the file RouteWareLog.txt in the folder located in the same folder as the application. The user should have write access to this folder. Universal Switching Corp reserves the right to change the format in futures updates.

Please note that application window's close button is non-functional. Depress the quit button to release resources and close the application.
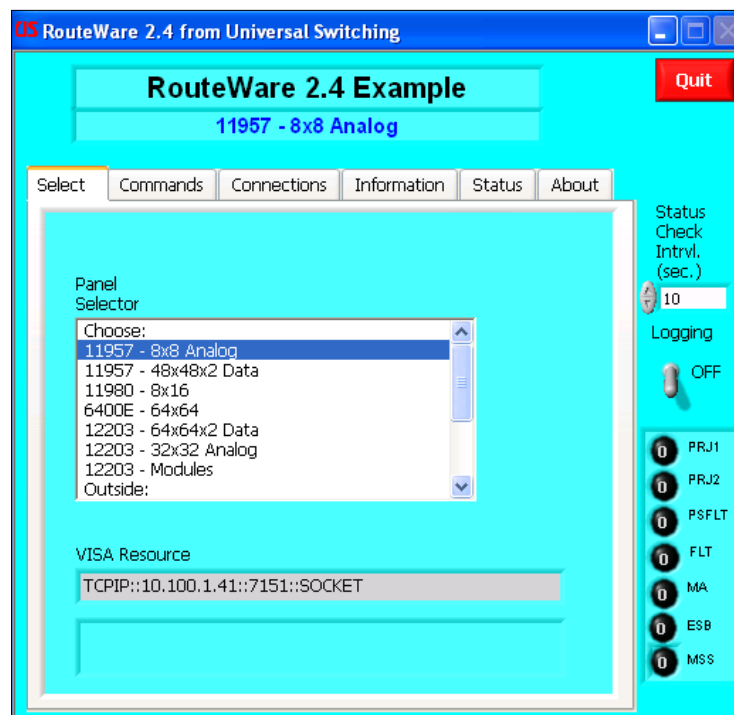
3.1. The Select Screen

The **Select** screen is displayed after you start the application. This screen provides a list of panels available in this configuration. There should be one line for every panel in the Panel List. Clicking on a panel makes it the active panel. Many applications would only need one panel, but the application can control different resources with ease.
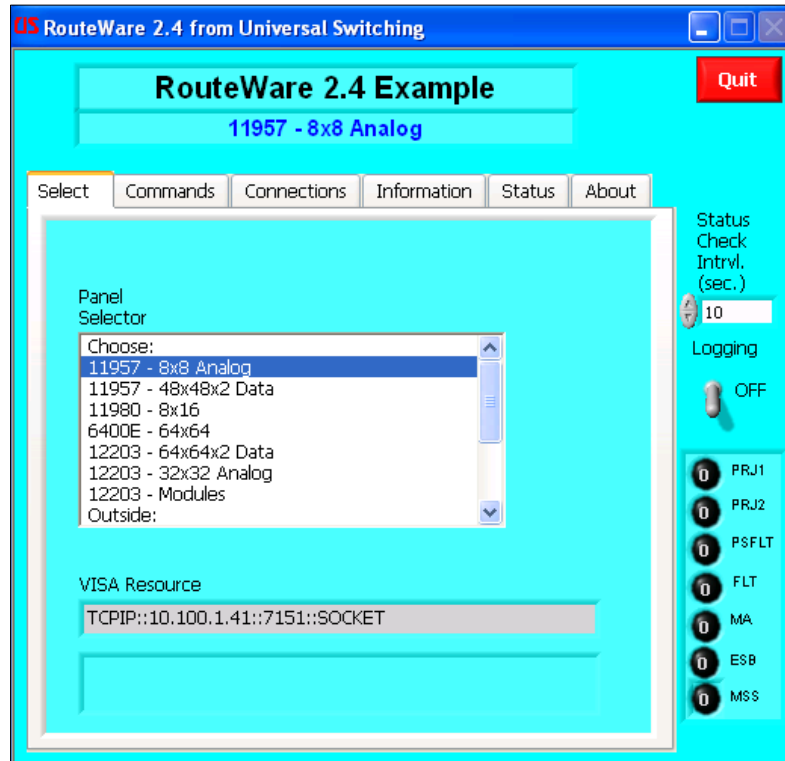
As a different panel is chosen, the **Commands** screen layout may change. Two or three boxes may be visible. Each one is configured by one of the files specified on the panel's line in the Panel List file. Note that the colors shown are the default examples, and can be easily changed.

3.2. The Commands Screen

The **Commands** tab is the main screen from which to control a switching system. Here, a list of all input and outputs, and buttons for the action to be taken (i.e. Connect, Disconnect) are provided.
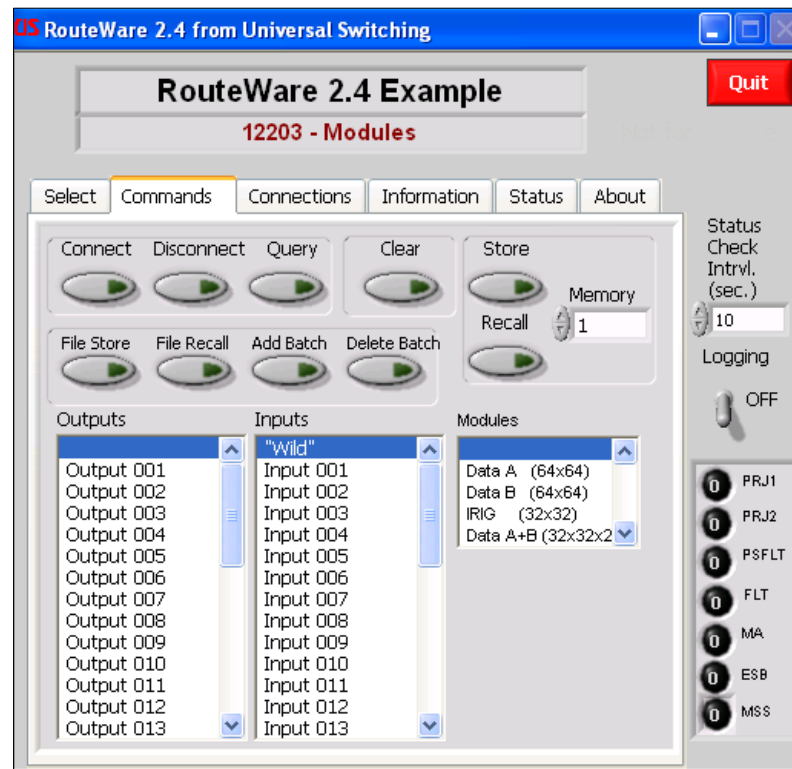
3.2.1. Connect Button

Select the desired combination in the above boxes and click the button to make the connection on the desired product. Note that connecting with either the output or the input equal to zero returns an error. Only one pair can be selected at a time.

3.2.2. Disconnect Button

Select the combination that you want to disconnect and hit it. Note that the input may be zero (wild). If the output was connected, then the input is disconnected. If the output was not in use and the input is wild, an error is returned.

3.2.3. Query Button

If a valid output and module (if a module box on that panel is present) are selected and the Query button is pressed, the input box shows the input (or none) to which that output is connected.

3.2.4. Clear Button

The Clear button clears all the connections on the product. After hitting the button, the user is prompted to insure that this action is desired.
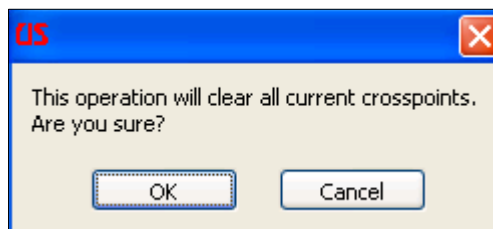
3.2.5. Store and Recall Buttons

All products from Universal Switching have configuration memory locations that are stored in nonvolatile RAM. Many products have memory locations from 1-199, but others are limited to less. (See the "Memories" indicator on the "Information" tab or use the Get? 28 query to determine the exact number for your product). The control automatically determines the correct number for your product and coerces a valid number.

These memory locations are used to store and recall common or often used configurations from the product's memory for quick and easy configuration of the switching array. It stores the complete configuration. When recalling, it first clears all connections, then recalls the configuration previously stored.

> ✋ *NOTE: Recalling a memory location that has not been stored causes an error.*

To use, select or type in the memory location desired, then press store or recall. Note that a prompt is given after either selection to verify your selection since storing overwrites anything previously stored in that location, and recalling clears any current configuration.

3.2.6. File Store and File Recall Buttons

Similar to the Store and Recall Buttons (3.2.5), but with the configuration stored to and recalled from the file system of the host running RouteWarePRO. Pressing the button brings up an operating system dialog box for the specific file. When using Recall, the selection of a file (signified by pressing the OK button in the dialog) causes the current configuration to be cleared.

Regardless of the extension used, the files are in a plain text format. The format is one line per active cross point, each line in the format output, input, module.

Example:

> 2, 4, 1
>
> 6, 7, 2

This connects to output 2 from input 4 on module 1 and to output 6 from input 7 on module 2.

On systems that **auto route**, there is no module operand as in the example:

> 6,7
>
> 3,2

This connects to output 6 from input 7 and connect to output 3 from input 2 with the product automatically routing to the correct modules (see your product's manual). Universal Switching Corp reserves the right to change the format in future updates. Note that this command stores and recalls the configuration for the entire box. This happens regardless of what sub-set of the modules the current panel is controlling.

3.2.7. Input/Output/Module Window Boxes

The window boxes showing the input and output selections available (and might also include a third "module" box) list the names specified within the "panel" text files. The names are user definable and care should be taken when defining the names so that they fit within these boxes. Only one item can be selected within each box.

3.2.8. Add Batch

This selection works similar to the FILE RECALL selection except that the existing connections are not cleared. In the event that an output in the list is already connected, the state of Autointerlock determines if the new connection is made or an output used error is generated.

3.2.9. Delete Batch

This selection works with the same overall file format as ADD BATCH and FILE RECALL. In this case the listed crosspoints are disconnected. The input operand can be zero or a valid input. If it's zero, it is understood as "any input" and the output is disconnected. If an input is specified, it must match the input to which the output is connected. In either case, it's OK if the output is already disconnected.

## 3.3.   The Connections Screen

Selecting the **Connections** tab shows all connections that are made and verified on the product. The connections of the modules can be read in two formats: Numeric and Alpha. These formats can be selected by a toggle switch at the bottom of the screen and by pressing the update button. One is the actual input and output channels on the product (Numeric), the other shows the user's text nomenclature derived from the panel text files (Alpha).

3.3.1. Numeric and Alpha Display

The **Numeric Display**, shown at your left side, provides the actual input and output channels on the product.

The **Alpha Display**, shown at your right side, provides the input and output user's text nomenclature derived from the panel text files.

When a Module Box is specified for a panel, a small version of it appears at the bottom of the Connection tab: use it to specify which module to view after the next update.
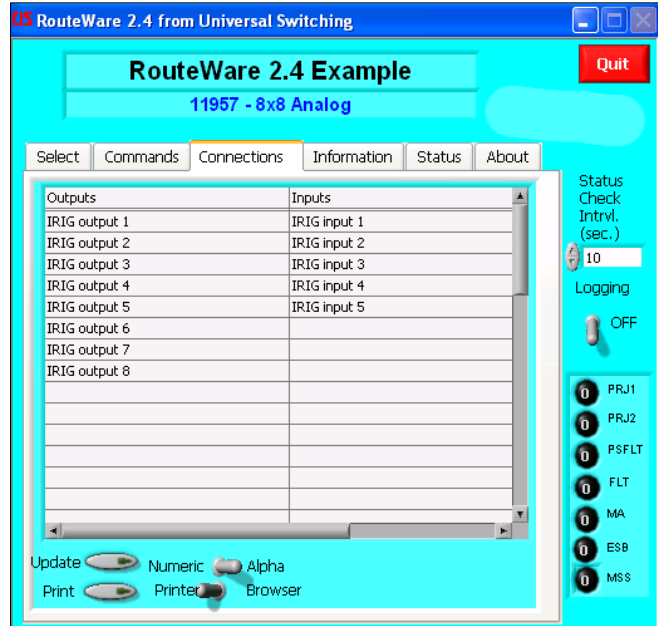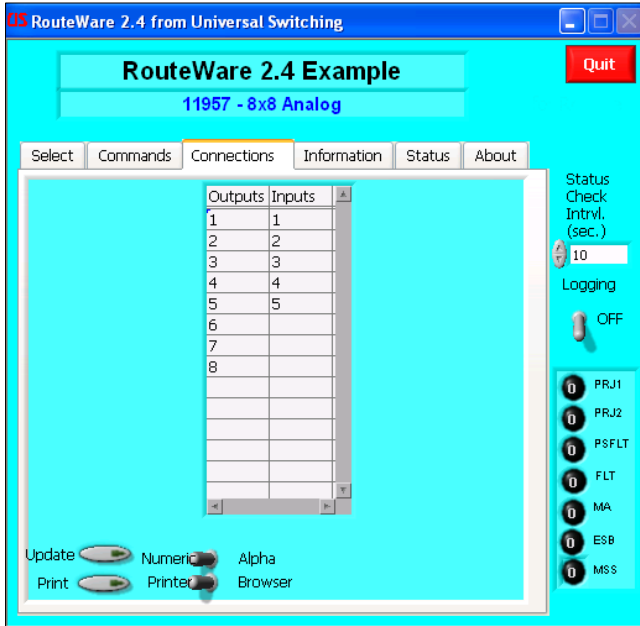
3.3.2. Print Selection

The print selection prints the current display using the operating system's default printer and the printer's default setting.

Also, the default browser can be used when more printing control is needed. This option can be selected by a toggle switch at the bottom of the screen.
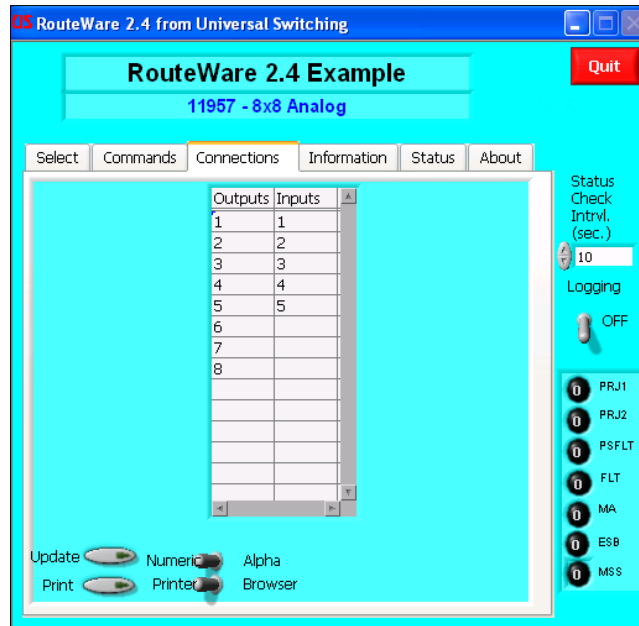
3.4. The Information Screen

The **Information** screen displays information about the system, including identification information, type of product, firmware revision code, MAC address, and also module information. This is valuable information when resolving technical issues with the factory. The **Information** screen can be selected by clicking on the information tab. As shown below, this screen displays several indicators and boxes that are updated every time the **Information** tab is selected.

✋ *NOTE: In order to display the latest system's information after a HOT - SWAP module installation; first go to the Status screen and perform a SELF-TEST to update the current status of the system and then click on the Information screen to view the latest system's information.*

The module's table information located at the right side of the screen provides information on each module installed in the system. If more than eight modules are installed in the system a scroll down selector on the upper left of the table is available to view these additional modules.
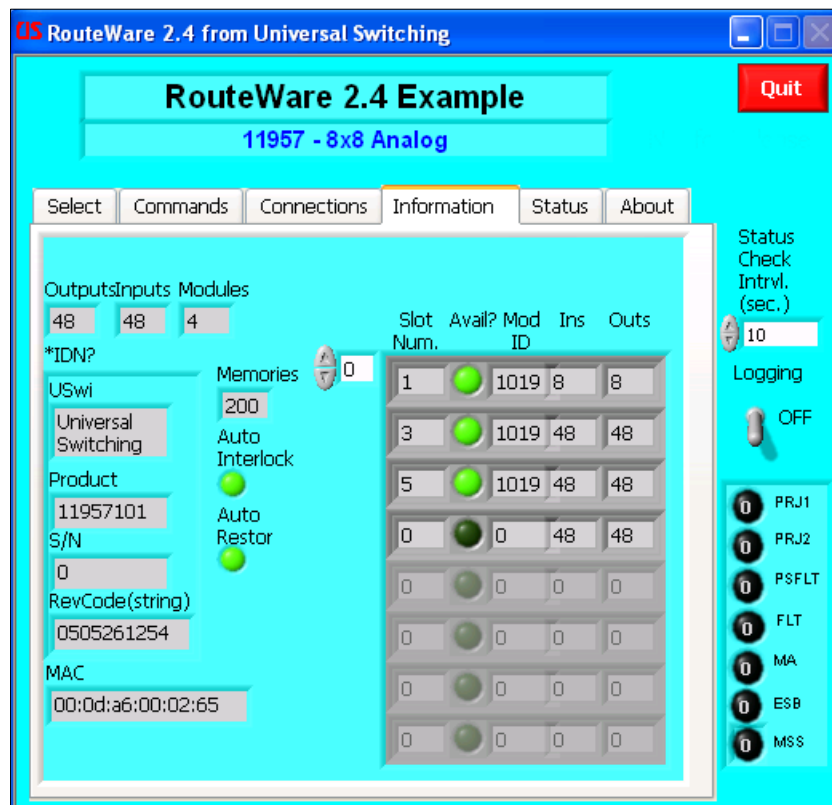
3.4.1. Output/Input and Modules

The total number of the system's output and input and switch modules used in the switching system.

3.4.2. *IDN?

The system's identification data includes,

- **USwi –** the manufacturer: Universal Switching Corp.
- **Product –** the type of product: Parallel or End-to –End.
- **S/N –** Serial Number of the model/system (always zero).
- **RevCode(String) –** System's firmware revision code.

The model code and revision code are extremely important for resolving technical issues with the factory.

3.4.3. MAC

Identifies the Media Access Control (MAC) address for the module's control processing unit (CPU). This is a unique alphanumeric string of hexadecimal numeral arranged as six octets separated by semicolons.

✍ *NOTE: Each module's CPU has a unique MAC address. If the module's CPU is changed or replaced, the MAC address is also changed.*

3.4.4. Memories

The maximum number of memories available for saves and recalls of switchpoint configurations.
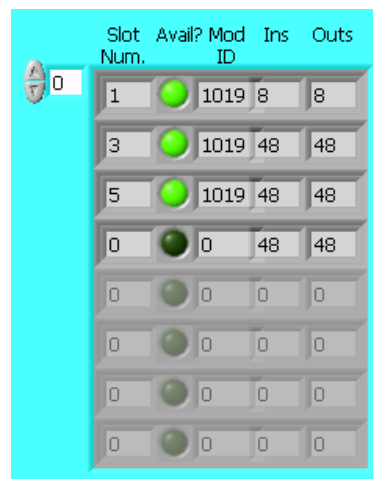

3.4.5. Auto Interlock button

When lit, indicates that the auto interlock is on.

3.4.6. Auto Restore button

When lit, indicates that auto restore is on.

3.4.7. Slot Num

Identifies the slot number of the mainframe module bay where switch module is installed. As shown below, the table lists one module per row. If there are more than eight modules installed in the system use the scroll down to view these additional modules.

3.4.8. Avail?

When lit, indicates that the detection of a module and available for switching operation.

3.4.9. Mod ID

Each switch module is identified with a unique four digits identification number.

3.4.10. Ins and Outs

Indicates the number of inputs and outputs on each switch module.

3.5.   The Status Screen

The status of the system is periodically monitored for maximum efficiency. On the main panel interface the **Status Check Intrvl** timer can be set in seconds by the user to check automatically the operating condition of the system.

If a malfunction or command error are detected in the system, the **Status** screen is displayed automatically highlighting the nature of the system's malfunction. Also, the **Status** screen can be selected by clicking on the **Status** tab.

As shown below, the **Status** screen displays several indicators and boxes that are automatically updated upon detecting a system' malfunction or command errors. Update buttons and a self test button are available to assist the user when resetting the system.
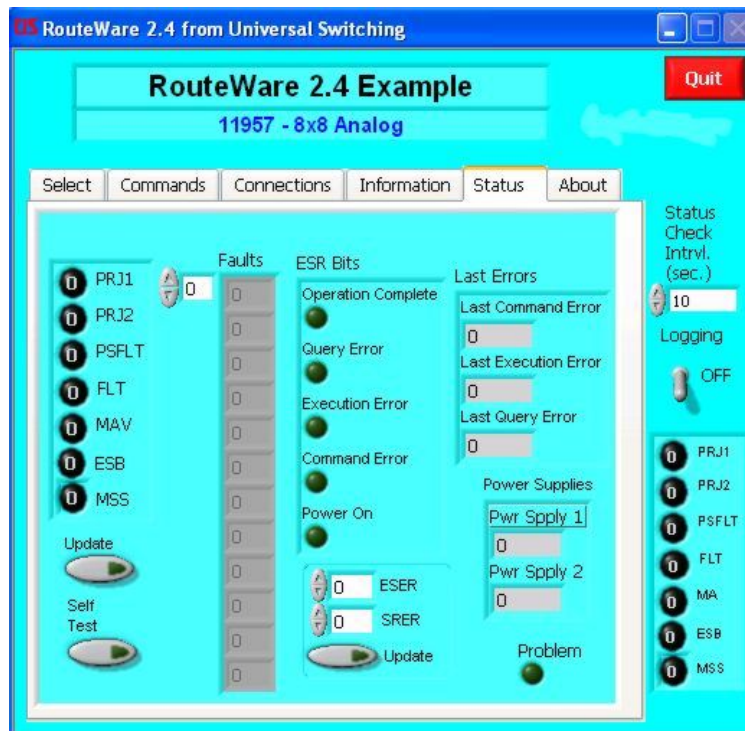
3.5.1. The Status Byte Register (SBR)

The Status Byte Register (SBR) indicators provide the current status of the system. When lit, these indicators highlight the nature of the failure detected in the system.
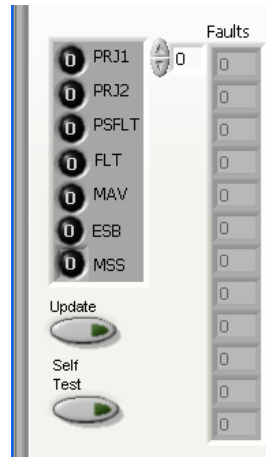
The SBR bits consist of the following indicators:

- **Project 1 (PRJ1) –** lights to indicate faults for customized projects.

- **Project 2 (PRJ2) –** lights to indicate faults for customized projects.

- **Power Supply Fault (PSFLT) –** lights to indicate faults in the power supplies.

- **Fault (FLT) –** lights to indicate the need to retrieve serious fault with the FAUlt? command.

- **Message Available (MAV) –** lights to indicate that there is data in the Output Queue.

- **Event Status Bit (ESB) –** lights to indicate that one or more of the bits in the ESR that were enabled in ESR are set.

- **Master Summary Status MSS) –** lights to indicate that one or more of the FLT, MAV, and ESB bits are set along with its corresponding bit in the SRER.

The update button - is used to update the SBR indicators, usually after a fault correction is made by the user.

The self-test button - performs a test of the system and display the current status of the system.

The faults – this is a single column that displays up to twelve faults. A scroll down button is available to select a fault when multiple faults are present.

3.5.2. The Event Status Register (ESR) Bits

The Event Status Register indicates the success or failure of a command to execute or respond.
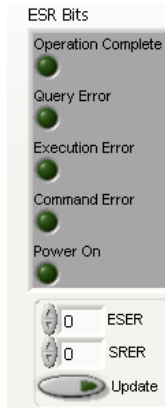

The ESR consists of the following indicators:

- **Operation Complete –** lights when an execution of the *OPC common command.

- **Query Error –** lights when the device was addressed to talk when the output queue was empty or that a new command was received before the output queue was emptied.

- **Execution Error –** lights when an execution error is encountered in a command.

- **Command Error** – lights when a syntax error is encountered in a command.

- **Power On –** lights when power is applied to the unit.

The ESER Selector – this sets the value of the Event Status Enabled Register (ESER). The value can be from 0 to 255. To set ESER value, either scroll down or enter the new value and the press the update button.

The SRER Selector – this sets the value of the Service Request Register (SRER). The value can be from 0 to 255. To set SRER value, either scroll down or enter the new value and the press the update button.

3.5.3. The Last Error

A numeric code indicates the nature of the syntax error when entering or executing an incorrect command.
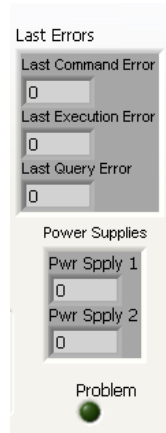
- **Last Command Error (LCD) -** when a command error occurs, a numeric code appears and its flag in ERS is set.

- **Last Execution Error (LEE) -** when an execution command error occurs, a numeric code appears and its flag in ERS is set.

- **Last Query Error (**LQE) - when a Query error occurs, a numeric code appears and its flag in ERS is set.

Power Supplies - under normal operation of the switching system, the status for Power Supply 1 and Power Supply 2 is set to zero "0". In the event of a power malfunction, a numeric code appears in these fields.

> ✍ *NOTE: The power supply assemblies used in Universal Switching Corp's products are highly reliable units, but due to normal wear and tear of the equipment a malfunction may occasionally occur. Please contact the factory for further assistance when in the event of power malfunction.*

Problem button – this indicator lights when a failure is detected in the switching system and remains lit until the failure is corrected. This indicator is very useful feedback when troubleshooting the system.

3.6. The About Screen

The **About** screen displays the software version and general copyright information.
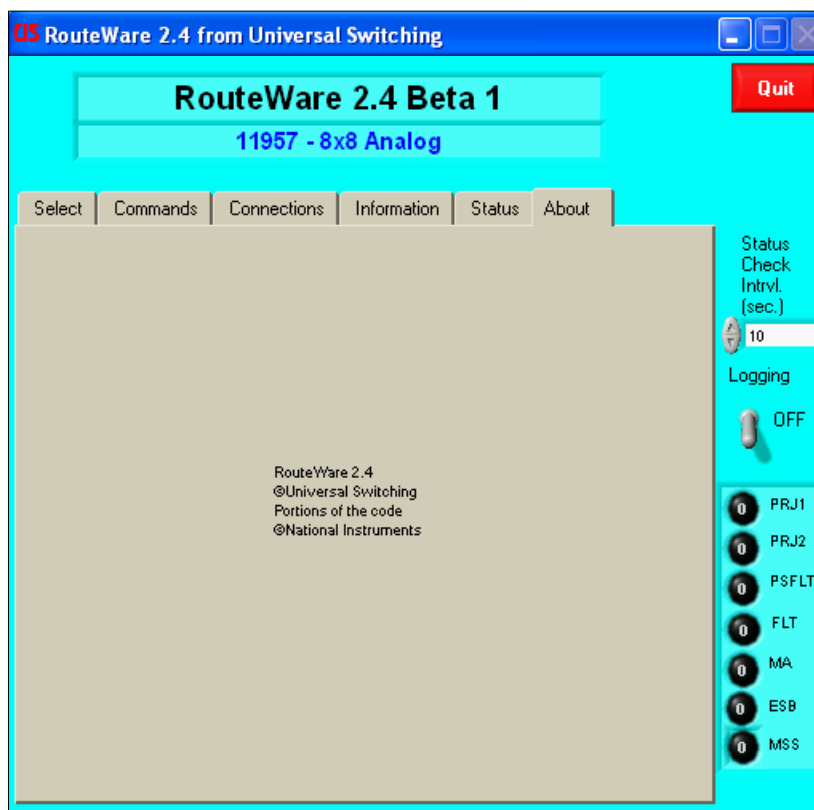
4. HTML Screen Color Guide

Below is an HTML color guide to assist you in choosing various colors for the program screens. These codes are utilized in the configuration **".txt"** files.

000000	000033	000066	000099	0000CC	*0000FF*
003300	003333	003366	003399	0033CC	0033FF
006600	006633	006666	006699	0066CC	0066FF
009900	009933	009966	009999	0099CC	0099FF
00CC00	00CC33	00CC66	00CC99	00CCCC	00CCFF
00FF00	00FF33	00FF66	00FF99	00FFCC	*00FFFF*
330000	330033	330066	330099	3300CC	3300FF
333300	333333	333366	333399	3333CC	3333FF
336600	336633	336666	336699	3366CC	3366FF
339900	339933	339966	339999	3399CC	3399FF
33CC00	33CC33	33CC66	33CC99	33CCCC	33CCFF
33FF00	33FF33	33FF66	33FF99	33FFCC	33FFFF
660000	660033	660066	660099	6600CC	6600FF
663300	663333	663366	663399	6633CC	6633FF
666600	666633	666666	666699	6666CC	6666FF
669900	669933	669966	669999	6699CC	6699FF
66CC00	66CC33	66CC66	66CC99	66CCCC	66CCFF
66FF00	66FF33	66FF66	66FF99	66FFCC	66FFFF
990000	990033	990066	990099	9900CC	9900FF
993300	993333	993366	993399	9933CC	9933FF
996600	996633	996666	996699	9966CC	9966FF
999900	999933	999966	999999	9999CC	9999FF
99CC00	99CC33	99CC66	99CC99	99CCCC	99CCFF
99FF00	99FF33	99FF66	99FF99	99FFCC	99FFFF
CC0000	CC0033	CC0066	CC0099	CC00CC	CC00FF
CC3300	CC3333	CC3366	CC3399	CC33CC	CC33FF
CC6600	CC6633	CC6666	CC6699	CC66CC	CC66FF
CC9900	CC9933	CC9966	CC9999	CC99CC	CC99FF
CCCC00	CCCC33	CCCC66	CCCC99	CCCCCC	CCCCFF
CCFF00	CCFF33	CCFF66	CCFF99	CCFFCC	CCFFFF
FF0000	FF0033	FF0066	FF0099	FF00CC	*FF00FF*
FF3300	FF3333	FF3366	FF3399	FF33CC	FF33FF
FF6600	FF6633	FF6666	FF6699	FF66CC	FF66FF
FF9900	FF9933	FF9966	FF9999	FF99CC	FF99FF
FFCC00	FFCC33	FFCC66	FFCC99	FFCCCC	FFCCFF
FFFF00	FFFF33	FFFF66	FFFF99	FFFFCC	FFFFFF

5. Resolving Issues

This section can help resolve some issues with the application configuration, and to assist with the resources needed to control the product.

5.1. Can't Find Product

In the event that the host can't locate the product, the Status screen appears with a message. Some things to check are:

1. Correct VISA resource

2. Product powered up

3. Product connected

4. Product has the same address as the resource.

5.2. Resource Name Examples

The following are some examples of VISA resources. For further details, check out the documentation for VISA from National Instruments (www.ni.com).

- Gpib0::10::instr

- Gpib::10::instr

- Asrl1::instr

- Asrl2::instr

- TCPIP::10.100.1.49::7145::SOCKET

6. Record of Changes

This section only applies to revised manuals. The table below indicates the revision level entered and a brief description of change(s).

Revision	Description of Change
2.4	Replaced all graphics to reflect the RouteWarePRO 2.4 interface Section 1, updated required software versions to run the RouteWarePRO 2.4 Section 3, revised to describe the RouteWarePRO 2.4 interface New section 3.2.8, added to describe the add batch function New section 3.2.9, added to describe the delete batch function Section 3.3, revised the connections screen to describe the print function New section 3.6, added to describe the about screen
A	Revised the warranty notice Added section 3.3.2 "Print Selection"
B	Revised Installation procedure for the set-up distributable.

NOTES