SOFTWARE VERSION 5.0

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PRG SERIES 400® TOOLS UTILITY

USER MANUAL

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PRG Series 400® Tools Utility User Manual

Version as of: September 30, 2015

PRG part number: 02.9680.0020.50

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Revision History

This manual has been revised as follows:

Version	Release Date	Notes
1.0	February 3, 2010	Initial Release
3.1	October 14, 2010	Updated to software version 3.1
5.0	September 30, 2015	Updated to software version 5.0

INTRODUCTION

About This Manual

This manual provides installation and operation instructions for the PRG Series 400® Tools Utility application. These instructions apply to S400Tools software version 5.0.

Familiarizing yourself with this information will help you get the most out of your PRG product.

Additional Documentation

For information on PRG Series 400® equipment, refer to the following PRG manuals:

+ PRG Series 400® Power and Data Distribution System User Manual (02.9680.0001)
+ PRG Series 400® 400 Amp Disconnect User Manual (02.9680.0200)
+ PRG Series 400® Ethernet Switch User Manual (02.9801.0001)
+ PRG Super Node™ User Manual (02.9821.0001)
+ PRG Node Plus User Manual (02.9801.0301)
+ PRG Node User Manual (02.9669.0001)
+ PRG Lighting Systems Networking Guide (02.3004.1000.0)

For more information about DMX512 and sACN protocols, refer to the following documents available from the American National Standards Institute (ANSI) at www.ansi.org:

+ ANSI E1.11 - 2008 (R2013)
  Entertainment Technology - USITT DMX512-A, Asynchronous Serial Digital Data Transmission Standard for Controlling Lighting Equipment and Accessories
+ ANSI E1.31 - 2009
  Entertainment Technology – Lightweight streaming protocol for transport of DMX512 using ACN
+ ANSI E1.20 - 2010
  Entertainment Technology-RDM-Remote Device Management over USITT DMX512 Networks

The above documents are also available for free in electronic format at tsp.plasa.org

For more information about Art-Net, refer to the following document available from Artistic Licence Engineering at www.artisticlicence.com:

+ Specification for the Art-Net Ethernet Protocol

Customer Service

For technical assistance, contact the PRG International Service Center or contact your nearest PRG office. Contact information for all PRG office locations can be found on our website at: www.prg.com/about-us/locations/

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For additional resources and documentation, please visit our website at: www.prg.com

OVERVIEW

About the S400Tools Utility

The S400Tools Utility is an application that can be run on any Java-enabled Mac® or Windows® computer. It is used for remote control, configuration, and monitoring of Series 400 systems. Features are as follows:

+ View and change active System Source.
+ View live DMX512 data across universes and systems.
+ View modules currently online.
+ View, edit, and reset module configurations.
+ Load system software updates.
+ View network status.
+ Monitor devices via RDM.

Requirements:

+ Mac® or Windows® computer with Java version 6 or later installed
+ CAT5e Ethernet Cable

Note: Refer to the Series 400 System User Manual (02.9680.0001) for complete Series 400 installation and operation instructions.

INSTALLATION

Installing the S400Tools Utility

The S400Tools Utility application requires Java 6 or later. It may be necessary to install or upgrade Java on the computer before using S400Tools. Java is available at: http://java.com/getjava/.

S400Tools

To install S400 Tools Utility:

Step 1. Download or copy S400Tools jar file to computer.

Step 2. Connect CAT5e Ethernet Cable from computer to Series 400 system.

Step 3. Configure network connection. The application looks for a port with an IP address in the pre-defined Series 400 subnet (10.66.x.x). Configure the IP address of the port to be used to an address in that range, such as 10.66.200.1, and the subnet mask to 255.255.0.0.

If an active 10.66 port is not found, the following message will be displayed:

Step 4. At computer, locate S400Tools application icon. Double-click icon to launch program.

Step 5. After startup, the software will ask if the previous configuration file should be loaded. Click **Yes** or **No** as required.

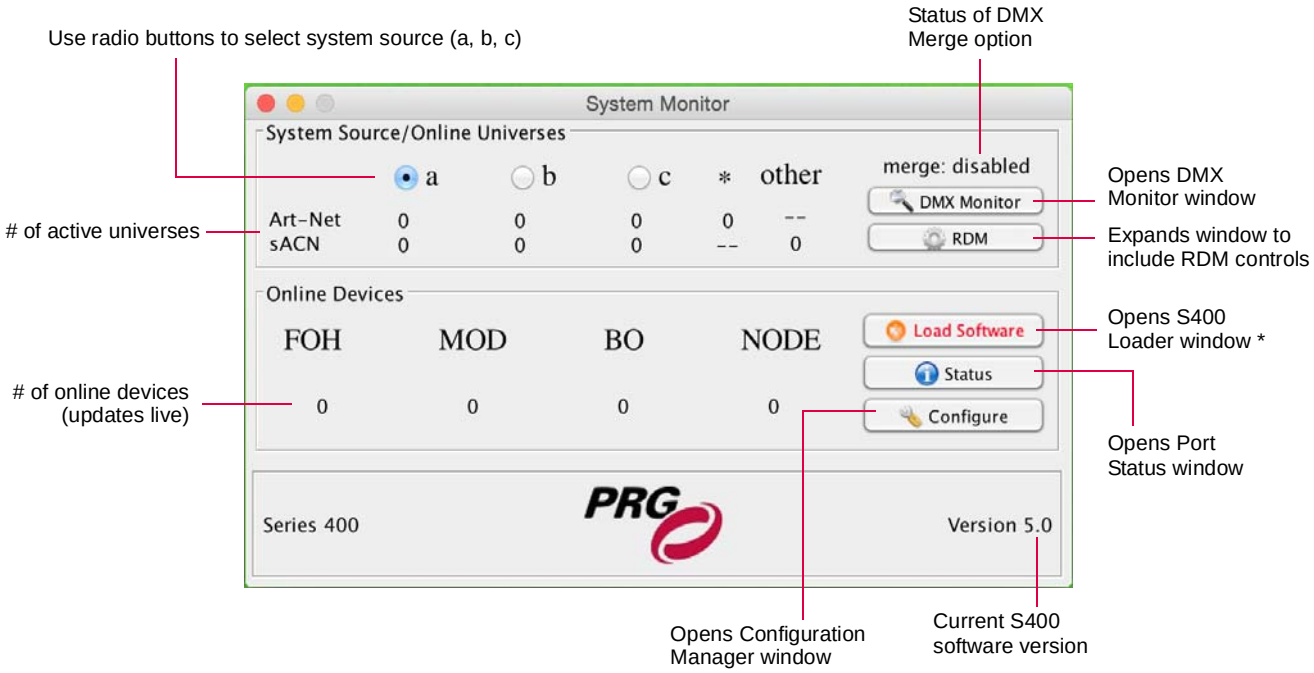
OPERATION

System Monitor

The System Monitor window provides an overview of system source/online universes and online devices. The window also allows for selection of the system source universe: either a, b, or c. (* is always active).

Online devices are abbreviated as follows:

+ FOH = Front of House
+ MOD = Breaker Module
+ BO = Breakout Box
+ Node = PRG Node, Node Plus, or Super Node



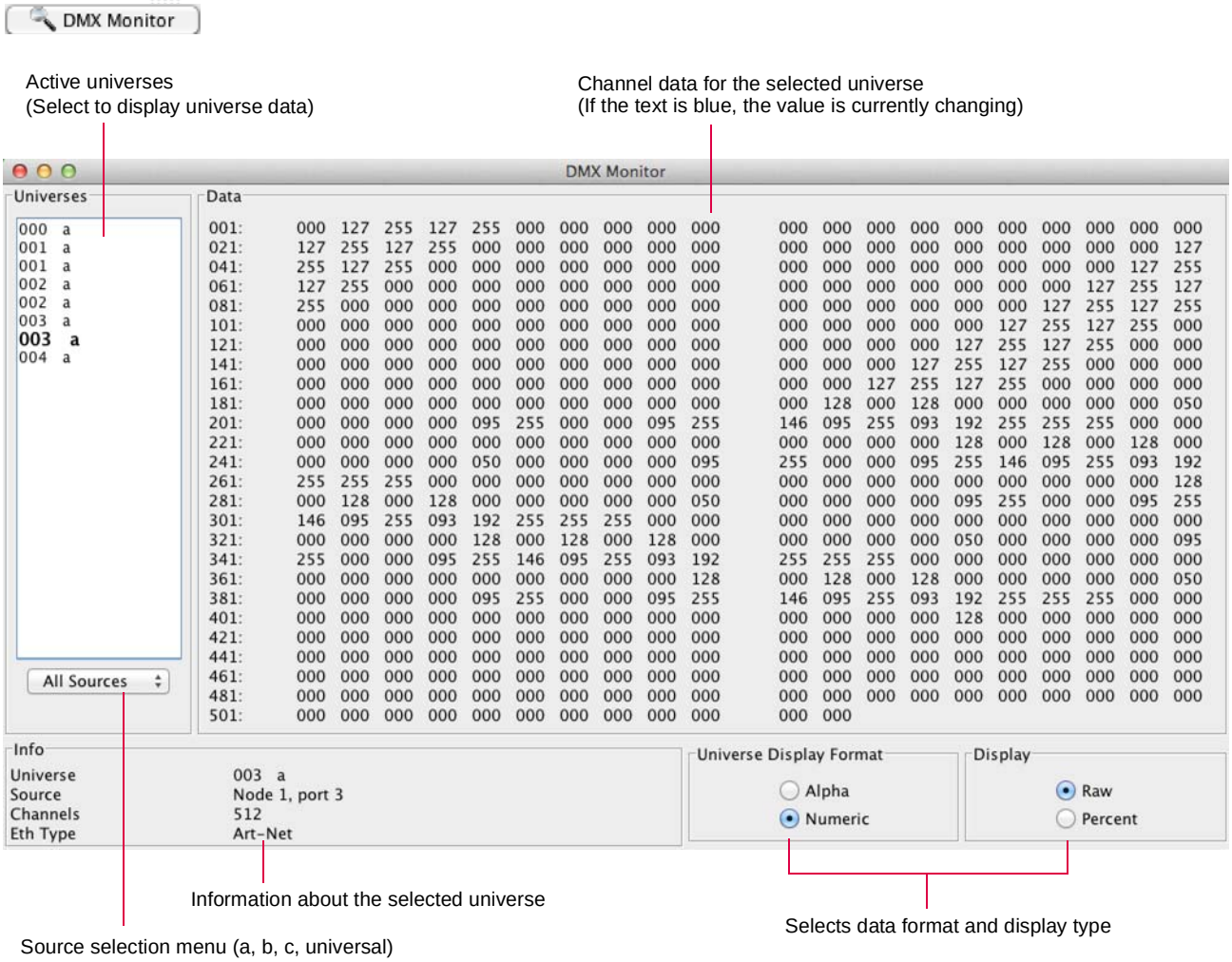
** The Load Software button will only be visible if software updates are needed.*

Note that if a system source change is made, a confirmation will be required:

DMX Monitor

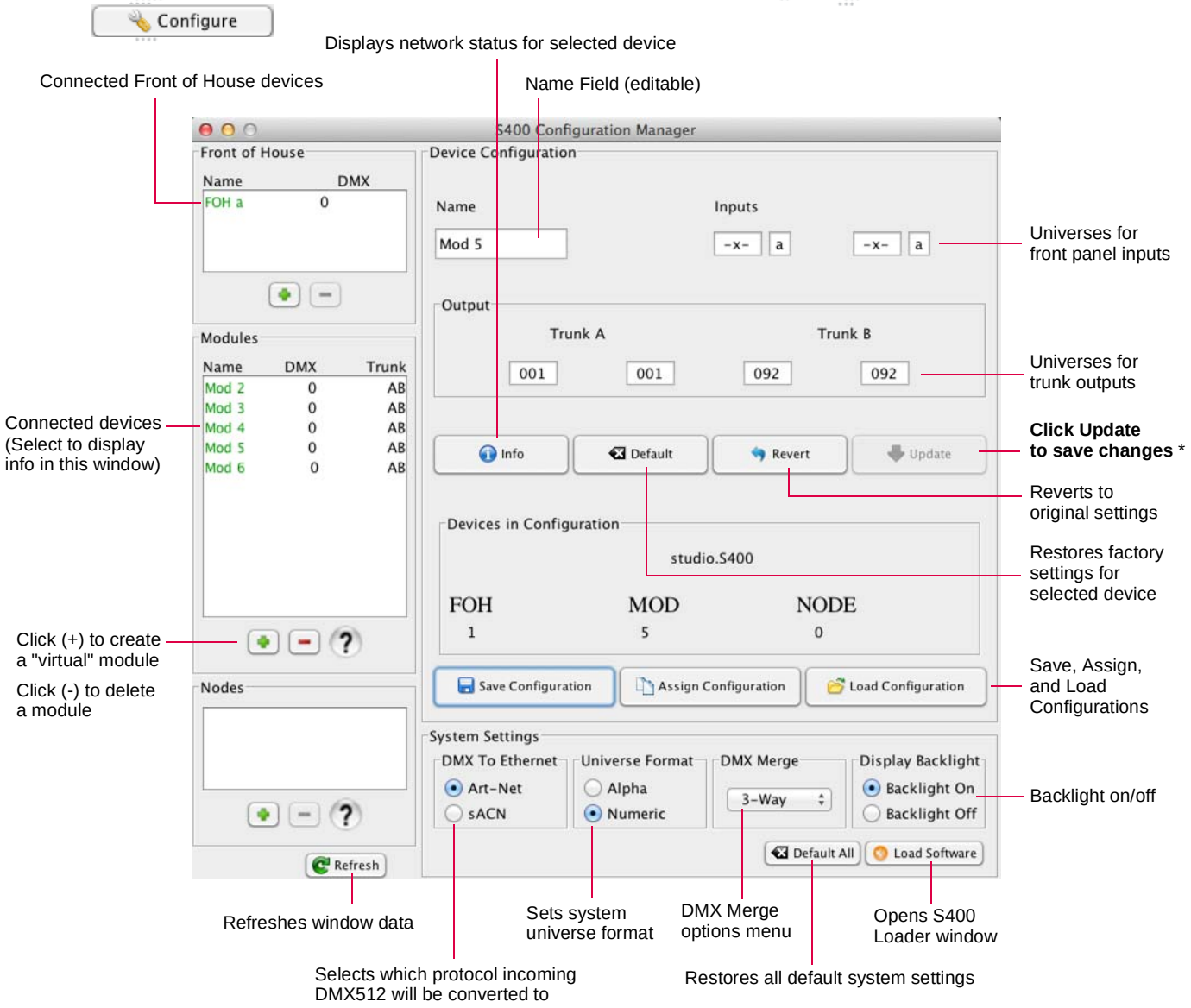
The DMX Monitor window provides live data for each online universe.

When a universe is selected, the window will display 512 bytes of universe data along with information about the source. The universe ID format may be set to either Alpha or Numeric, and the Display may be set to Raw or Percentage. Values that are changing will be highlighted in blue.



Configuration Manager

The Configuration Manager window allows editing of device names, input and outputs, setting up and saving device configurations, initiating software updates, and configuring various system settings such as universe format and DMX Merge options. The device list updates automatically every few seconds and can be refreshed manually by clicking the Refresh button at the lower left.



** The Update button will only be active if changes have been made.*

Devices

Active FOH, Module, and Node devices are displayed at the left side of the window. Select a device for editing by clicking on its name. Color coding is as follows:

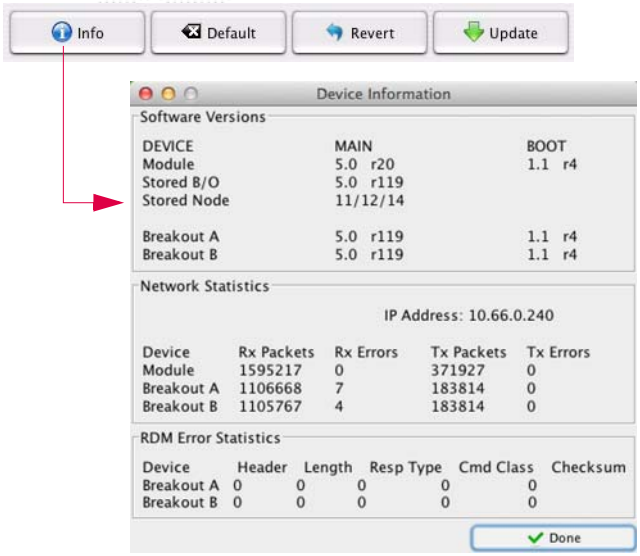
- Green: online
- Red: offline
- Blue: not saved
- Gray: not assigned
- Yellow: needs software update

Device Configuration

This section of the window displays the current configuration status for a device, and allows editing of the name, inputs, and outputs. It also provides options for updating, reverting changes, resetting to defaults, and viewing more information.

Button functions are as follows:

- **Update** - sends changes to the device.
- **Revert** - returns the device to its original settings.
- **Default** - resets the device to its factory default settings.
- **Info** - brings up the Device Information window.



Devices In Configuration

This section of the window displays the number of devices stored in the configuration file. By storing a configuration file, it is possible to create a configuration before having an actual physical system. The configuration can then be assigned to real devices once a physical system is hooked up.

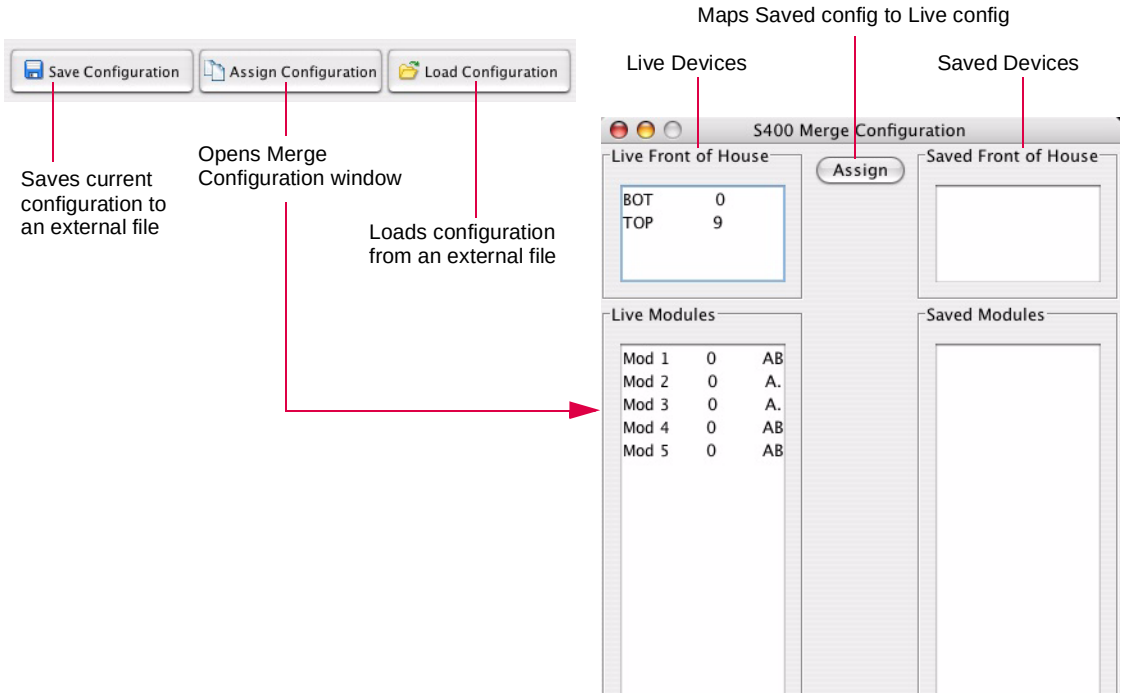
Button functions are as follows:

Click the **Add (+)** button to create a "virtual" module and then set its inputs and outputs.

Click **Delete (-)** button to delete a virtual module.

Configurations may be saved to external files using the **Save Configuration** button and imported using the **Load Configuration** button.

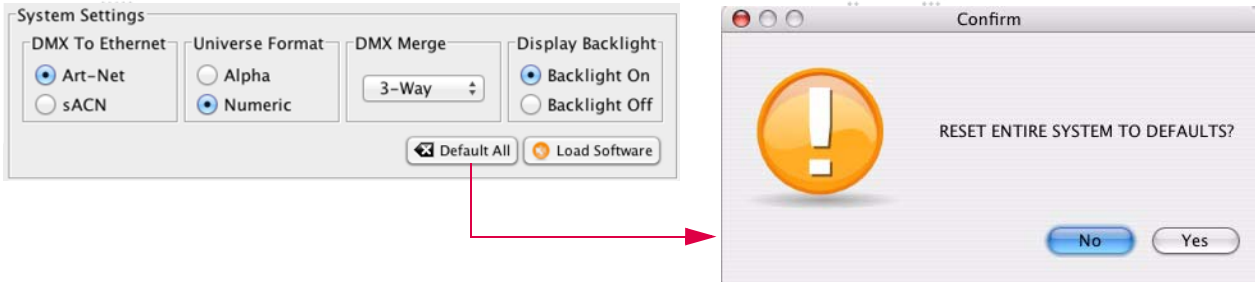
Clicking the **Assign Configuration** button will open the Merge Configuration window. In this window, the Live devices are shown on the left, while the Saved devices are shown on the right. Select one from each list and click the **Assign** button to map the Saved configuration to the Live configuration.



System Settings

This section of the window allows setting of the DMX universe format (alpha or numeric), selection of DMX Merge options, resetting all system defaults, and for initiating a software update.

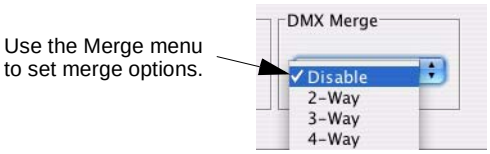
The **Default All** button will reset all system devices to their factory settings. *This action will require a confirmation, and should only be done for shop prep or initial start-up!*



DMX Merge allows merging of DMX512 data for multiple universes assigned to the same number, including both Art-Net and sACN sources of that universe. For example, if two inputs are set to 001a and 2-way merge is enabled, then the resulting output for outputs set to universe 001 would be the highest value for each channel between the two inputs (HTP). If three inputs are active at 001, the outputs would be disabled.

Options are as follows:

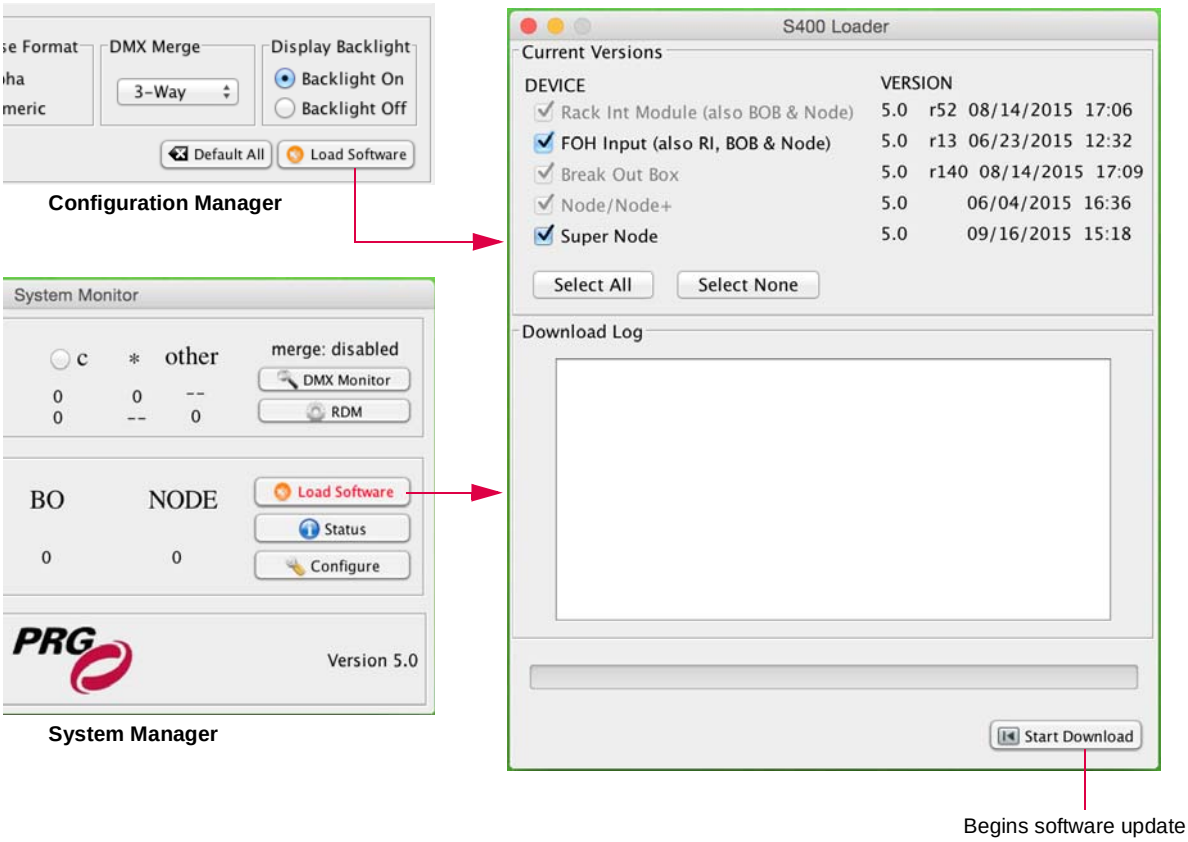
- **Disable -** no DMX universe merging.
- **2-Way** - allows up to 2 DMX universe inputs per universe.
- **3-Way -** allows up to 3 DMX universe inputs per universe.
- **4-Way -** allows up to 4 DMX universe inputs per universe.



Software Loader

The S400 Loader window can be opened by clicking the **Load Software** button in either the System Manager or the Configuration Manager. The S400 Loader can be used to view current software versions for all online devices and to initiate software updates for selected devices. (Devices can be selected by clicking their checkbox.)

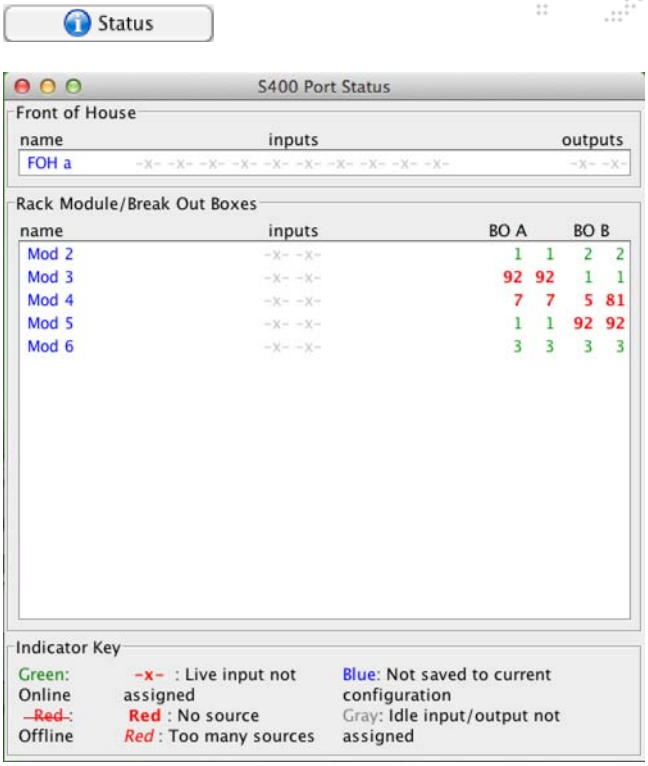
When the **Start Download** button is clicked, all device software versions will be updated sequentially. Progress of the update will be shown via the text display and the progress bar.



Port Status

The Port Status window displays the current status of online and stored devices along with the current state of configured DMX512 input and outputs.

Color coding indicates each device's status, as defined in the Indicator Key at the bottom of the window.



Remote Device Management (RDM)

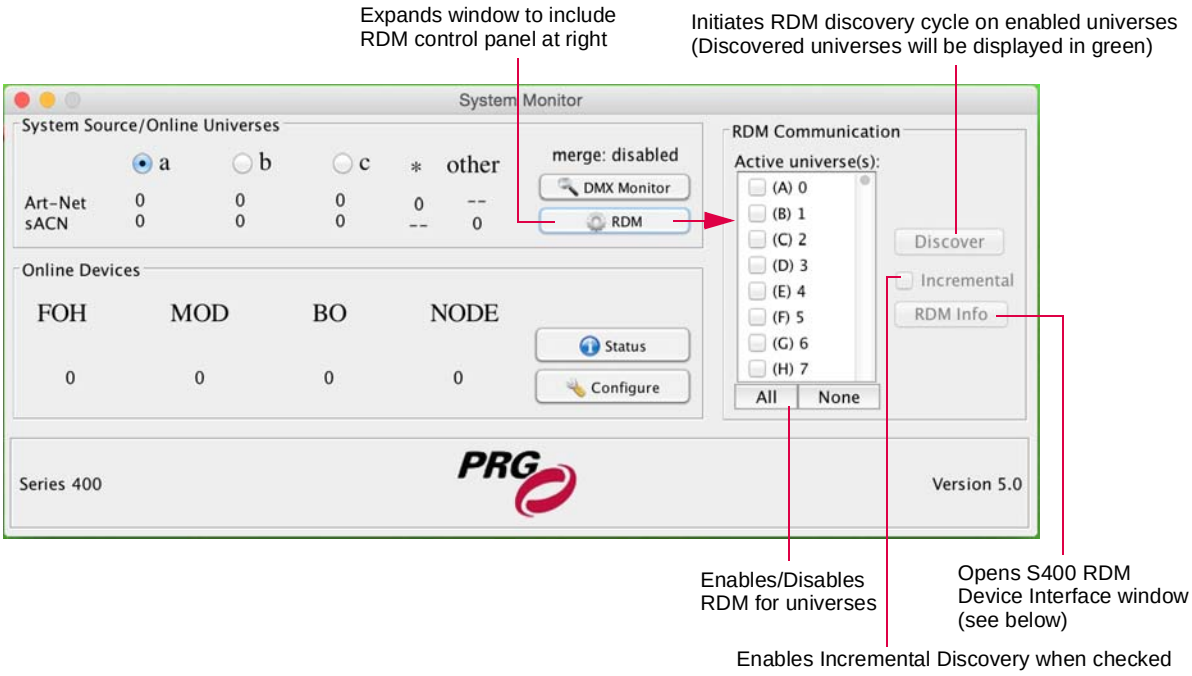
The RDM Communication control panel allows monitoring of devices connected to Series 400 Breakout modules or Ethernet via RDM. (Note that RDM is only supported by Super Node devices with the FPGA upgrade.)

RDM can be activated for any or all active universes by checking the appropriate checkboxes.

Guidelines:

+ RDM messages are interleaved with DMX512 control, so RDM should always be disabled during show conditions.
+ Not all fixtures support RDM, and some may incorrectly interpret RDM messages as DMX512 and move or change color when RDM is active.
+ In large systems, it may take some time (several minutes) to discover all devices and get basic information.

The System Monitor window will expand to include the RDM control panel when the **RDM** button is clicked, as shown below:



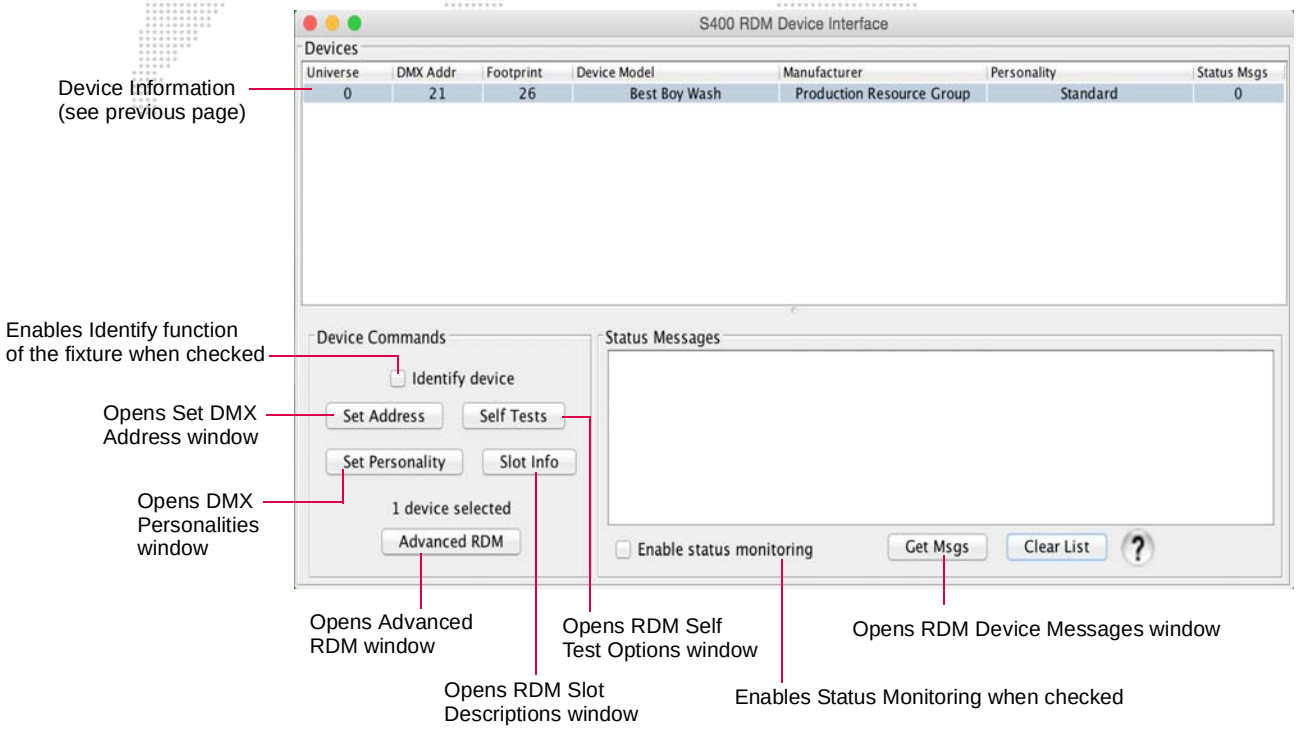
The **Increm (Incremental)** checkbox enables the automatic discovery function. In this case, S400 Tools will periodically perform discovery on enabled universes to find newly added devices. Note that RDM messages are interleaved with DMX512 control, so RDM should not be enabled during show conditions. Full discovery and retrieval of device information for large systems can take a considerable amount of time and can affect system responsiveness to DMX512 control. For more information refer to the ANSI E1.20 standard.

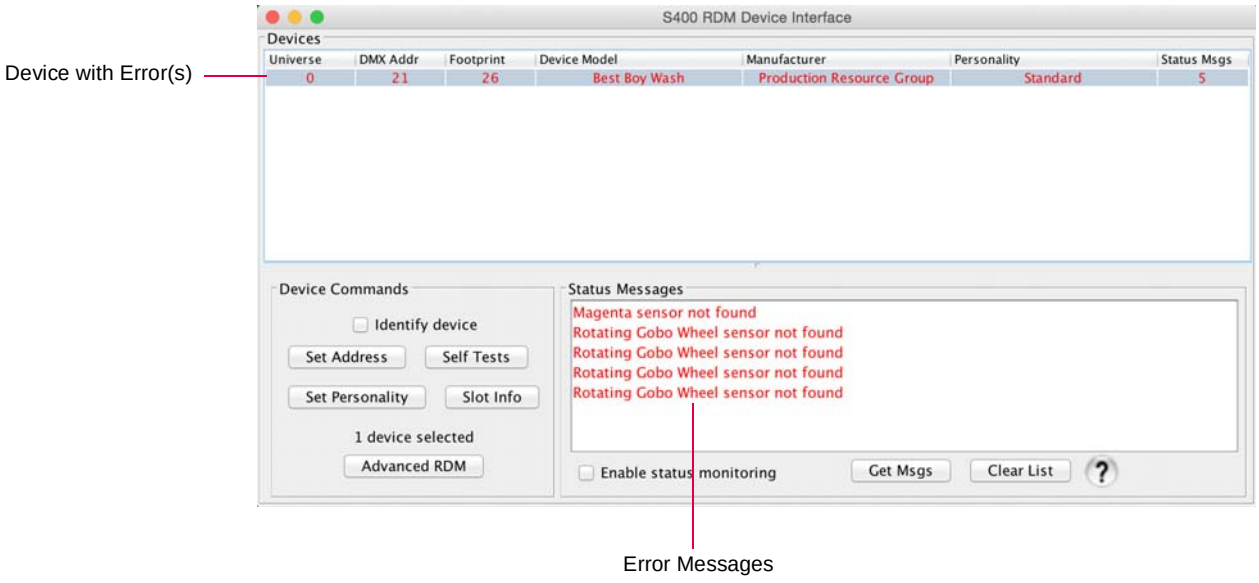
RDM Device Interface (Info)

The RDM Device Interface window provides a list of configurable devices. Window controls allow for setting an address, personality, and slot descriptions, along with an option to run self tests. The displayed device information is as follows:

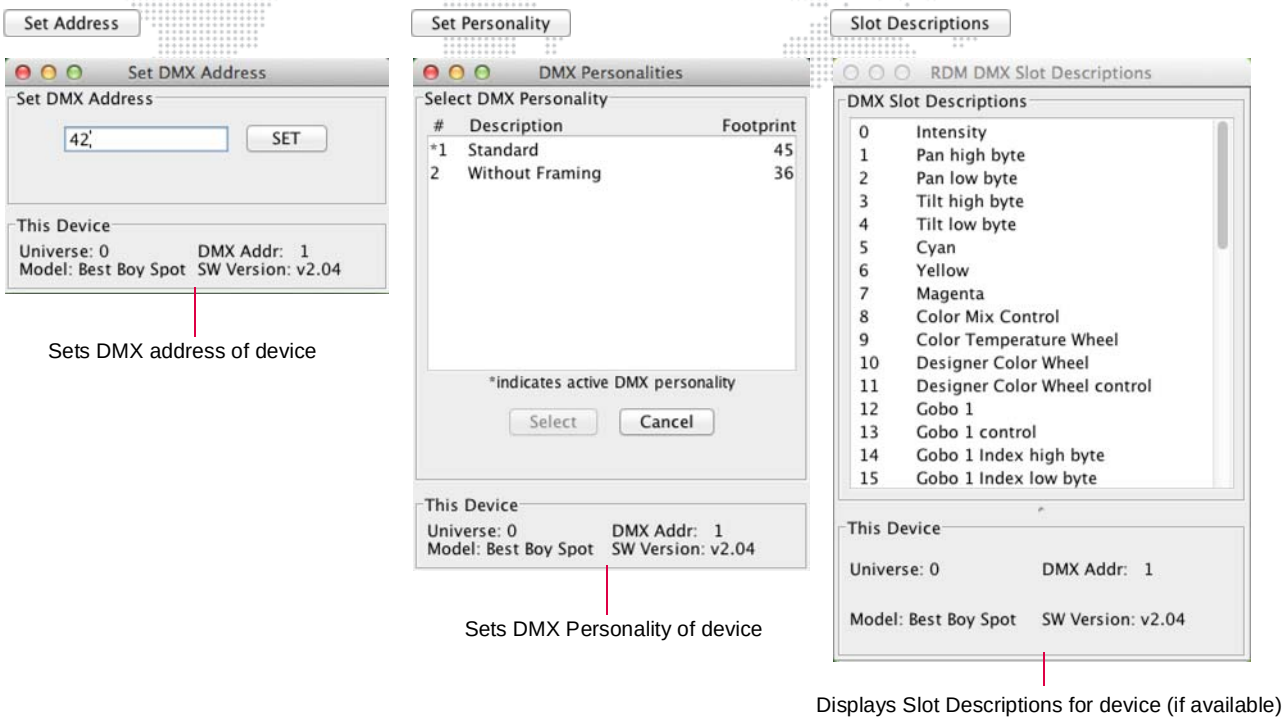
+ **Universe** - Series 400 universe number for the device.
+ **DMXAddr** - Device DMX start address.
+ **Footprint** - Device DMX footprint (number of DMX channels).
+ **Device Model** - Device-provided model name.
+ **Manufacturer** - Device-provided manufacturer name.

+ **Personality** - Device DMX personality (mode).
+ **Status Msgs** - Count of returned status messages from device (can be viewed by pressing SET/GET/Status button).



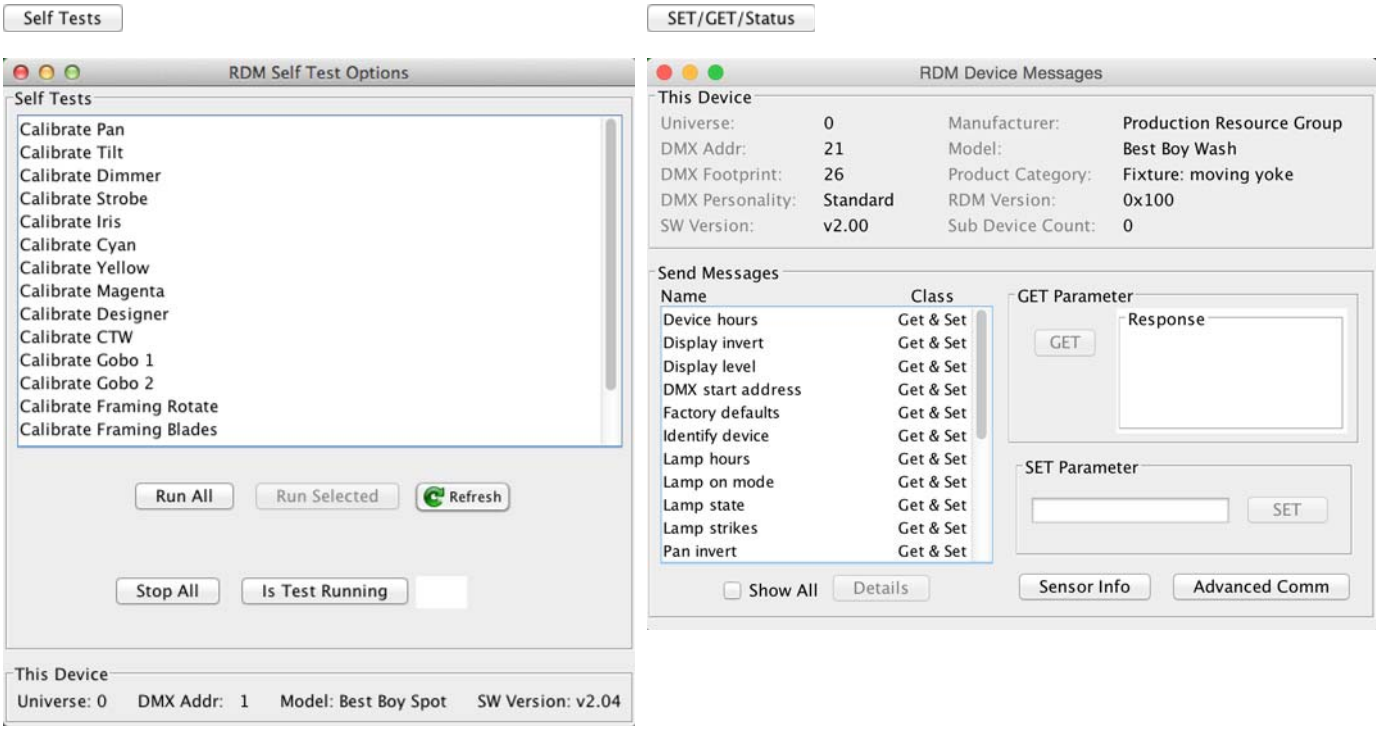


The **Identify device** checkbox can be used to enable the identify function of the fixture. In this case, the fixture will move, blink, or do whatever it is designed to do in order for it to be found (identified) so that it can be configured.



The RDM Self Test Options window provides options for testing the device (if self tests are available).

The RDM Device Messages window (accessed by clicking the **SET/GET/Status** button) displays status messages and provides a method to perform low-level RDM get/set messages. (For more information about this advanced function, refer to the manufacturer's documentation for the device.)



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