SR-60
USER GUIDE

PLUG INTO THE FUTURE OF TECHNOLOGY

ARNOUSE DIGITAL DEVICES CORP.

Revision History

Revision	Notes
V2.5	Revision 2.5 was published in November of 2017.

Table of Contents

How to Read this Document

This manual details installation of the chasis, the components inside of the chassis, and notable features of the SR-60 server solution.

Installations will be supported by ADDC. Unless otherwise specified, all instructions provided in this manual will assume that a user is a trained technician.

Notes, Important Information & Warnings

You will see this icon throughout the manual intended to point out warnings, important information, and briefly explain any new terminology.

Section 1.0 - Recieving Your SR-60

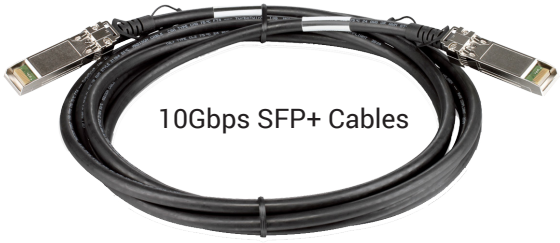
Section 1.1 - What's in the Box?

Equipment (Included)

- SR-60 Chassis
- SR-60 Top Cover [Comes Assembled]
- BioDigitalPC® Server Cards [Check Invoice for Quantity]
- 4 AC/DC Power Supplies
- 12 10Gbps SFP+ Cables
- 4 AC Power Cords
- 2 Rack Slides

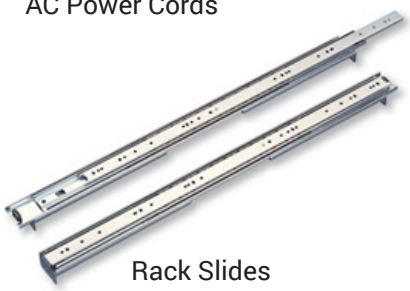
Equipment (Not Included)

- Laptop or Testing Network
- 5/32" Allen Key (Optional)



AC Power Cords

AC/DC Power Supplies



Rack Slides

Section 2 - SR-60 Preparation

Section 2.1 - Preparing For Your SR-60

When installing the SR-60 into a rack, the selected location should meet environmental standards as described below.

Rack Space and Airflow Considerations

To allow for adequate airflow, technicians should observe the following space and airflow requirements when deciding where to install a rack.

- Leave a minimum clearance of 36in (91.4cm) in front of the rack.
- Leave a minimum clearance of 20in (50.8cm) behind the rack.

Temperature Considerations

Your SR-60 is designed to operate at room temperature with its self-contained cooling.

Power Considerations

When properly configured and installed the SR-60 can draw up to 2kW depending on the number, load, and version of the BioDigitalPC®s used.

❗ To prevent improper cooling of equipment, do not block the fans.

❗ If using the dual feed redundant power solution (See Section 2.6.2), each power source must be capable of supporting a maximum draw of 2kW.

Section 2.2 - Installing Your SR-60 into a Rack

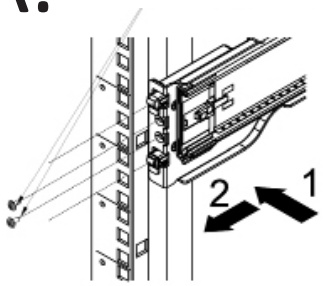
This section provides information on installing the SR-60 chassis into a rack unit with the quick-release rails provided.

❗ Stability hazard. The rack stabilizing mechanism must be in place, or the rack must be bolted to the floor before you slide the unit out for servicing. Failure to stabilize the rack can cause the rack to tip over and cause severe injury to the technicians and damage to the device.

The chassis package includes two rail assemblies in the rack mounting kit. Each assembly consists of two sections: an inner fixed chassis rail that secures directly to the server chassis and an outer fixed rack rail that secures directly to the rack itself.

❗ Inner and outer chassis rails are shipped together, before continuing please seperate outer rail from inner rail.

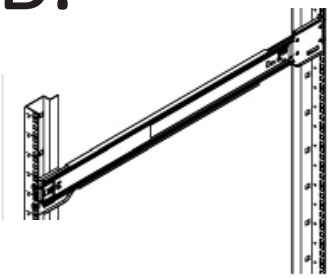
A.



Hang the hooks of the rails into rack holes. Screw the rails in if necessary.

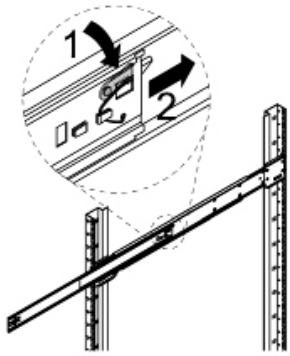
Make sure the ball shuttle is at the very front.

B.



Repeat step A to mount all four corners.

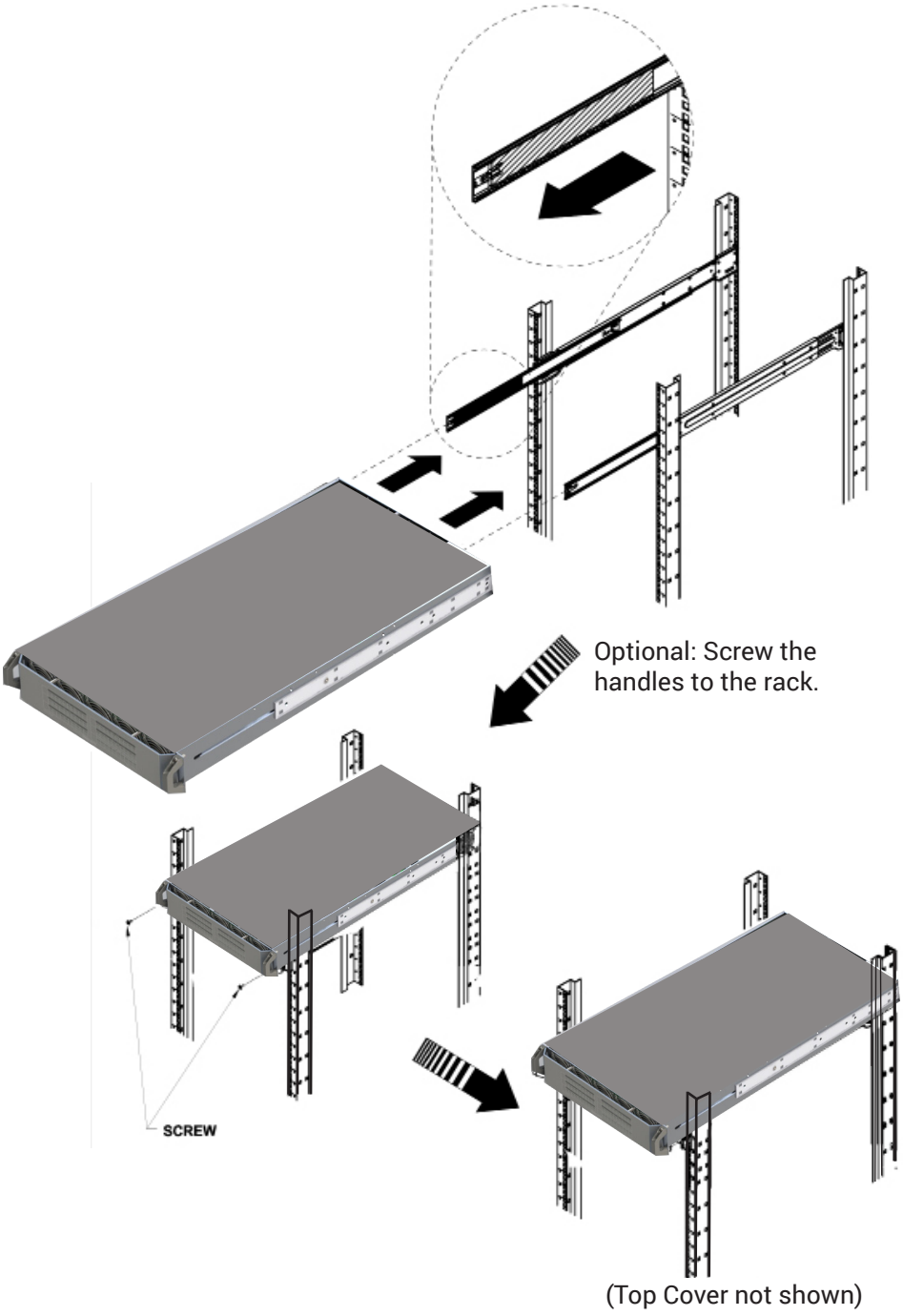
C.



Press the lever to extend the outer rails.

Section 2.2 - Installing Your SR-60 into a Rack

D. Align the inner rails into the extended outer rails and push the chassis to the rear of the rack.



Section 2.3 - Installing Your BioDigitalPC®s

BioDigitalPC®s are hot-pluggable, meaning technicians do not need to remove power to begin adding or removing them.

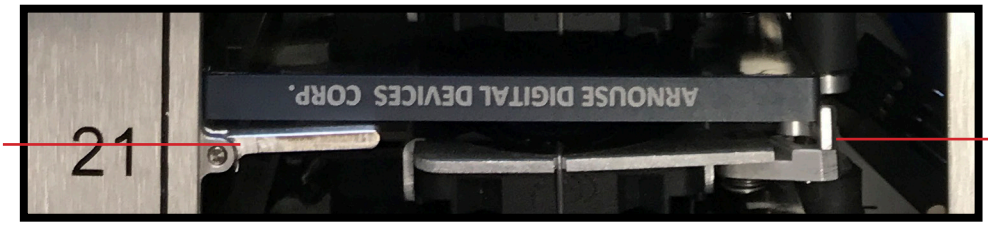
❗ Only trained technicians are authorized to work beneath the SR-60 System Cover and access any of the components inside the system.

Section 2.3.1 - Removing the SR-60 Top Cover:

In order to add or remove BioDigitalPC®s the SR-60 chassis can be pulled out of the rack, or the SR-60's Top Cover needs to be removed temporarily.

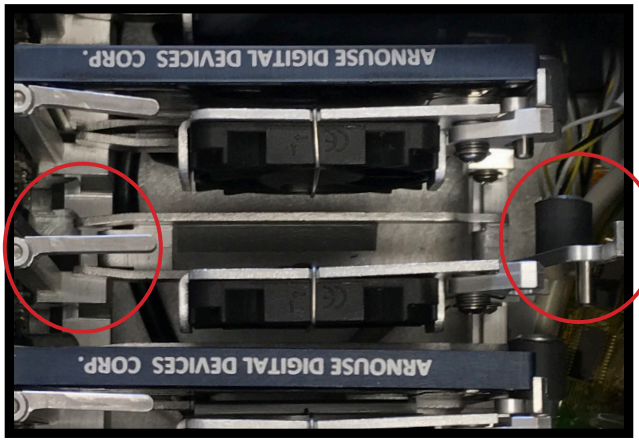
❗ SR-60 system can be running while installing new server cards.

Section 2.3.2 - Installing a BioDigitalPC®

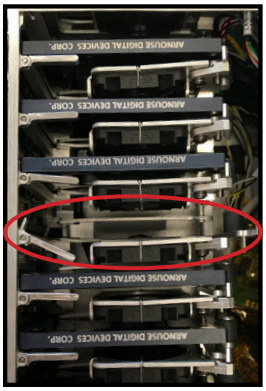


Fully inserted card

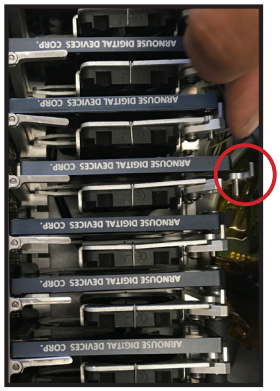
Step 1: Make sure the latch is perpendicular to the system cover.



Step 2: Make sure locking tab is unlocked.



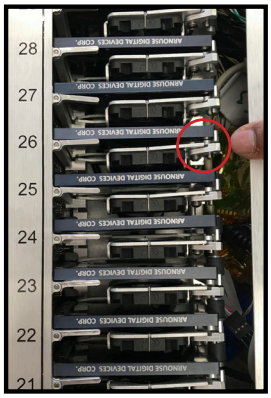
Step 3: Insert Card with "Arnouse Digital Devices Corp." facing upwards and the connector of the card is facing towards the latch. When inserting the card place between the two horizontal metal bars, ensuring the card is going to be aligned properly.



Step 4: Once the card is in between the two horizonal bars, locate the small locking tab and push it in towards the card. The card should now be locked into place.

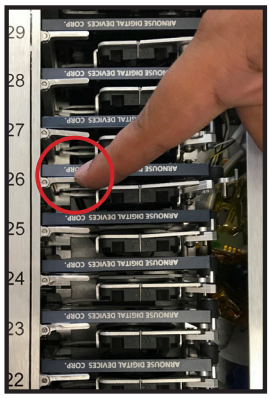
Section 2.3 - Installing Your BioDigitalPC®s

Section 2.3.3 - Removing a BioDigitalPC®

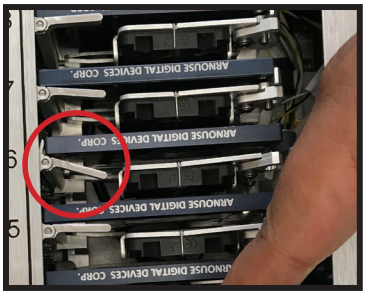


Step 1: Find the locking tab located to the right of the card slot.

Unlock the locking tab.



Step 2: Pull the ejection bar forward towards you, you should feel the card pop out of the connector.

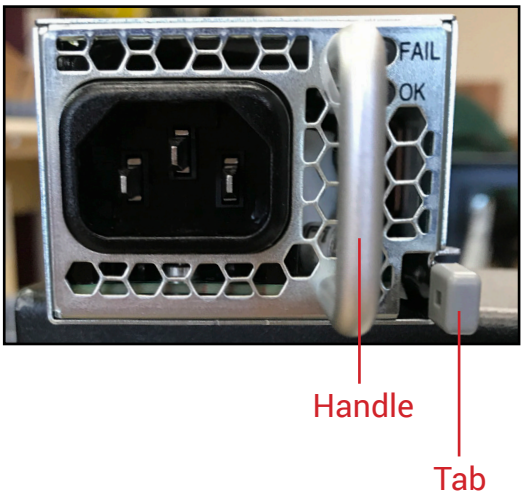


Step 3: Reset the ejection bar to the original position to make the card removal easier.

Section 2.3.4 - Replacing the SR-60 Top Cover

Once complete, a technician should replace the SR-60 Top Cover.

Section 2.4 - Installing Your SR-60 Power Supplies



Section 2.4.1 - Remove an SR-60 Power Supply

1. Push SR-60 Power Supply locking tab to the left.

2.While holding the locking tab, pull the SR-60 Power Supply handle and remove.

Section 2.4.2 - Install an SR-60 Power Supply

1. Locate an empty SR-60 Power Supply bay

2. Push the SR-60 Power Supply straight into the SR-60 Chassis

3. Connect your AC Power Cord into the replacement SR-60 Power Supply

4. You should see the "OK" LED illuminated green.

❗ The SR-60 requires two power supplies for the system to operate optimally. To ensure redundancy see the power supply schemas in Section 2.6. Remove and replace only one power supply at a time in a system that is to always remain powered on.

❗ After installing a new power supply allow several seconds for the system to recognize the new component. The power supply OK status indicator will turn green to signify that the power supply is functioning properly.

❗ Correct orientation pictured, inserting power supplies upside down may damage the system.

Section 2.5 - Networking Your SR-60

Section 2.5.1 - Minimal/Testing Equipment
1 10/100 Ethernet Cable
1 External Computer (eg. a laptop)

Section 2.5.2 - 1Gbps Networking Schema
3 10/100 Ethernet Cables
6 10/100/1000 Ethernet Cables
1 10 port (or more) 10/100/1000 Ethernet Switch

RECOMMENDED

Section 2.5.3 - 10Gbps Networking
(with ROMWare Switch Management)

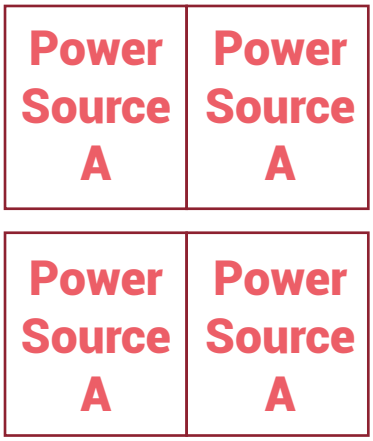
3 10/100 Ethernet Cables
1 4 port (or more) 10/100 Ethernet Switch
Six or twelve SFP+ 10Gbps Cables (included)
If using 6 10Gbps SFP+ Cables:
1 8-port (or more)SFP+ 10Gbps Ethernet Switch
or, if using 12 SFP+ 10GbpsCables:
1 16-port (or more) SFP+ 10Gbps Ethernet Switch

Section 2.5.4 - 10Gbps Networking
(without Out of Band Switch Management)

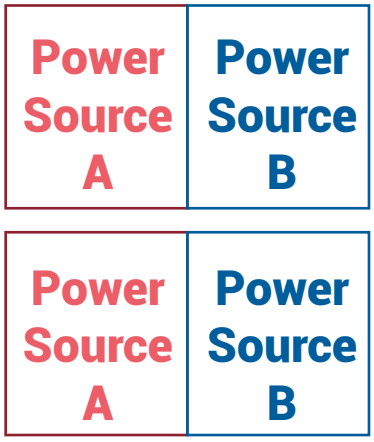
All equipment found in Section 2.5.2, plus the following:
Six or twelve SFP+ 10Gbps Cables (included)
If using 6 SFP+ 10Gbps Cables:
1 8-port (or more) SFP+ 10Gbps Ethernet Switch
or, if using 12 SFP+ 10GbpsCables:
1 16-port (or more) SFP+ 10Gbps Ethernet Switch

Section 2.6 - Power On Your SR-60

Section 2.6.1 - Single Feed Redundant Power Supply Configuration



Section 2.6.2 - Dual Feed Redundant Power Supply Configuration



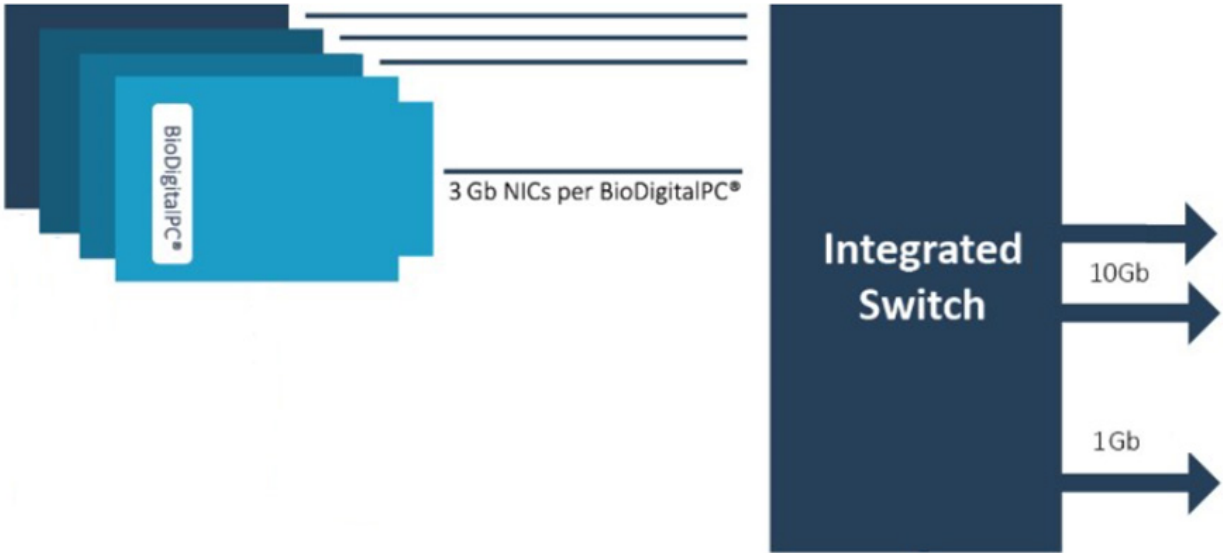
❗ **Each** Power Source must be capable of the maximum draw of 2kW.

❗ There is no power button.

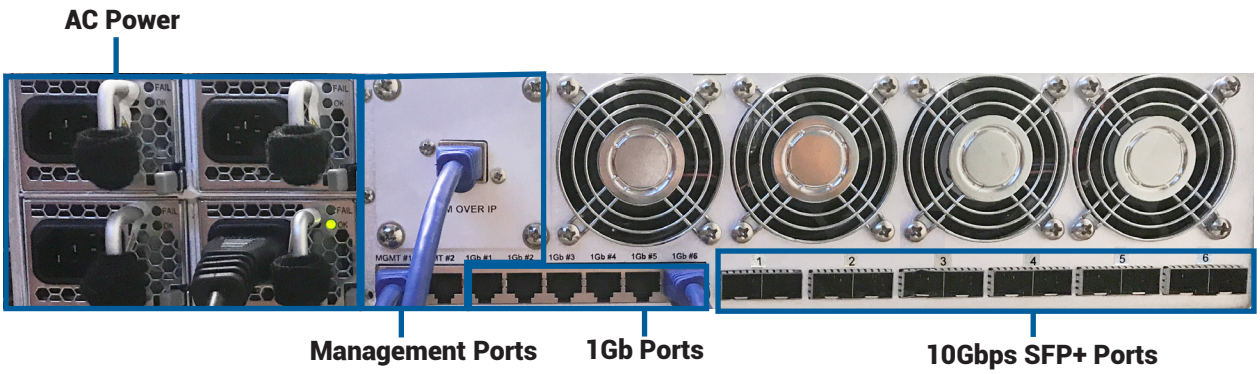
Section 3 - SR-60 Overview

Section 3.1 - SR-10 Modules

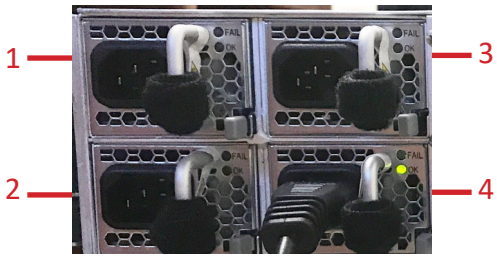
As shown in the Section 3, the SR-60 is broken up into six SR-10 Modules. Each SR-10 Module contains 10 BioDigitalPC® slots, each having three 1Gbps NICs attached to an integrated switch. Each switch has two SFP+ 10Gbps connectors and one 1Gbps RJ-45 connector broken out to the rear panel of the SR-60 (See Section 3.2 for additional information). Each SR-10's integrated switch and BioDigitalPC® power control are managed via the SR-60's Web-based management program called: ROMWare (See Section 4 for additional information).



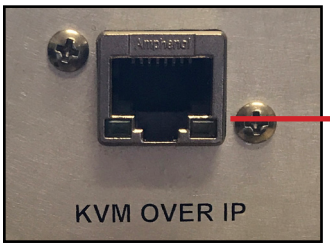
Section 3.2 - Rear Panel

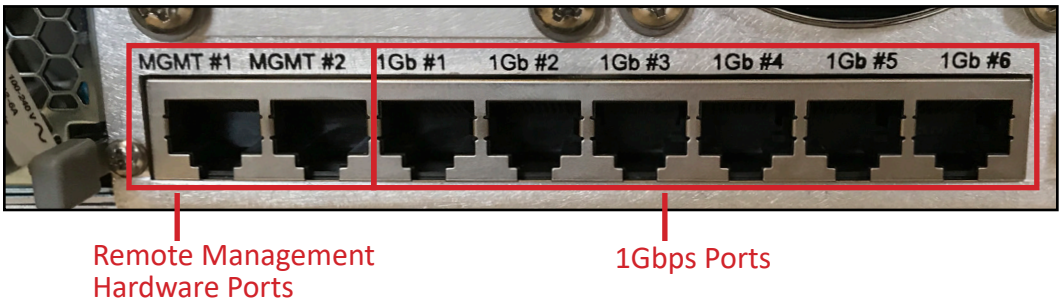


Section 3.2.1 - AC Power

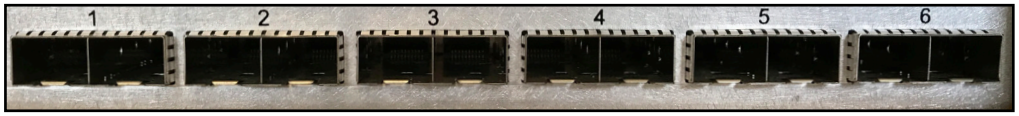


Section 3.2.2 - Management Ports

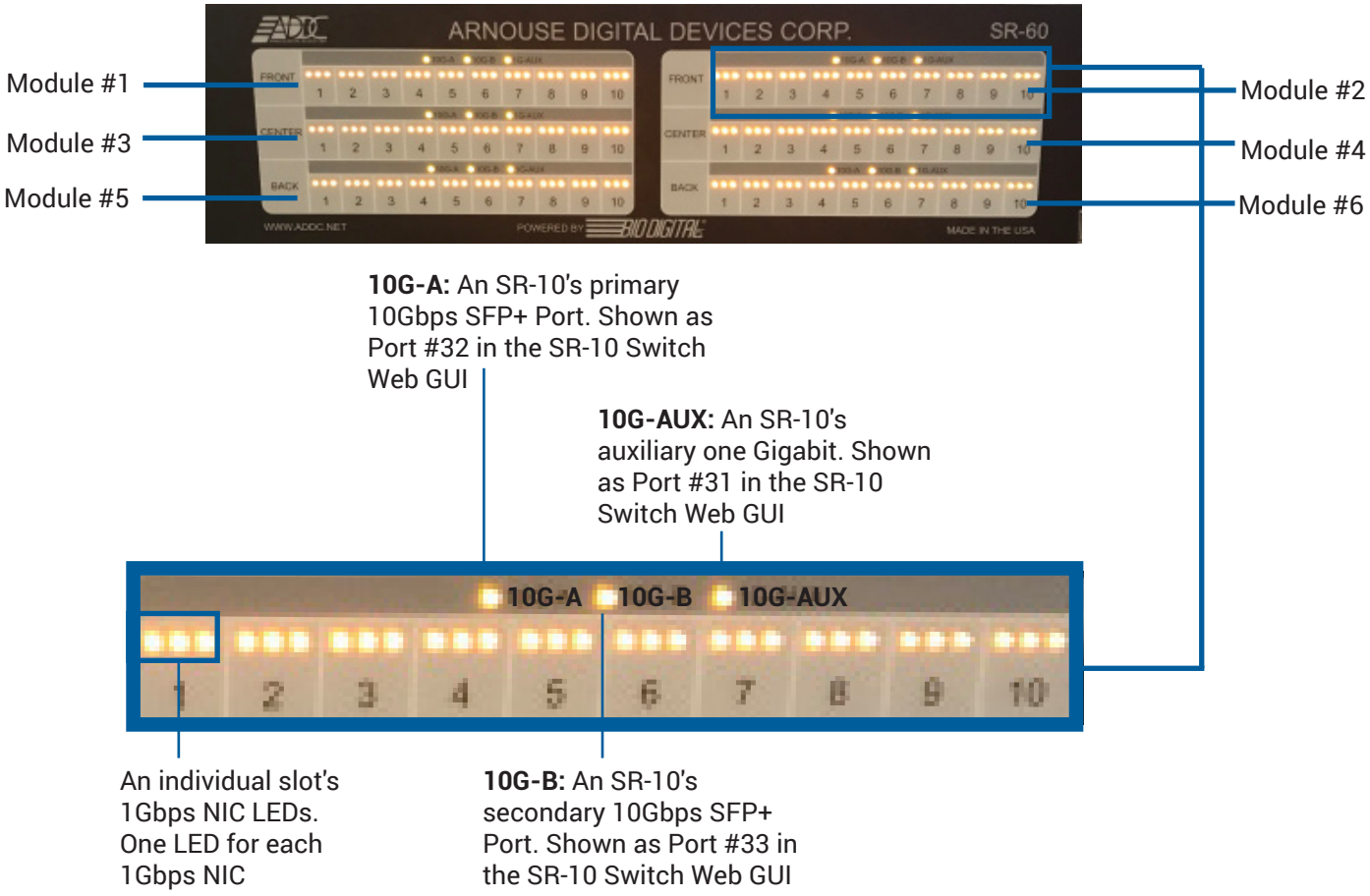




Section 3.2.3 - 10Gbps SFP+ Ports

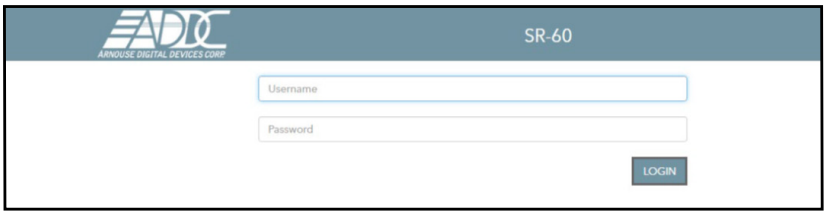


Section 3.3 - Front Panel



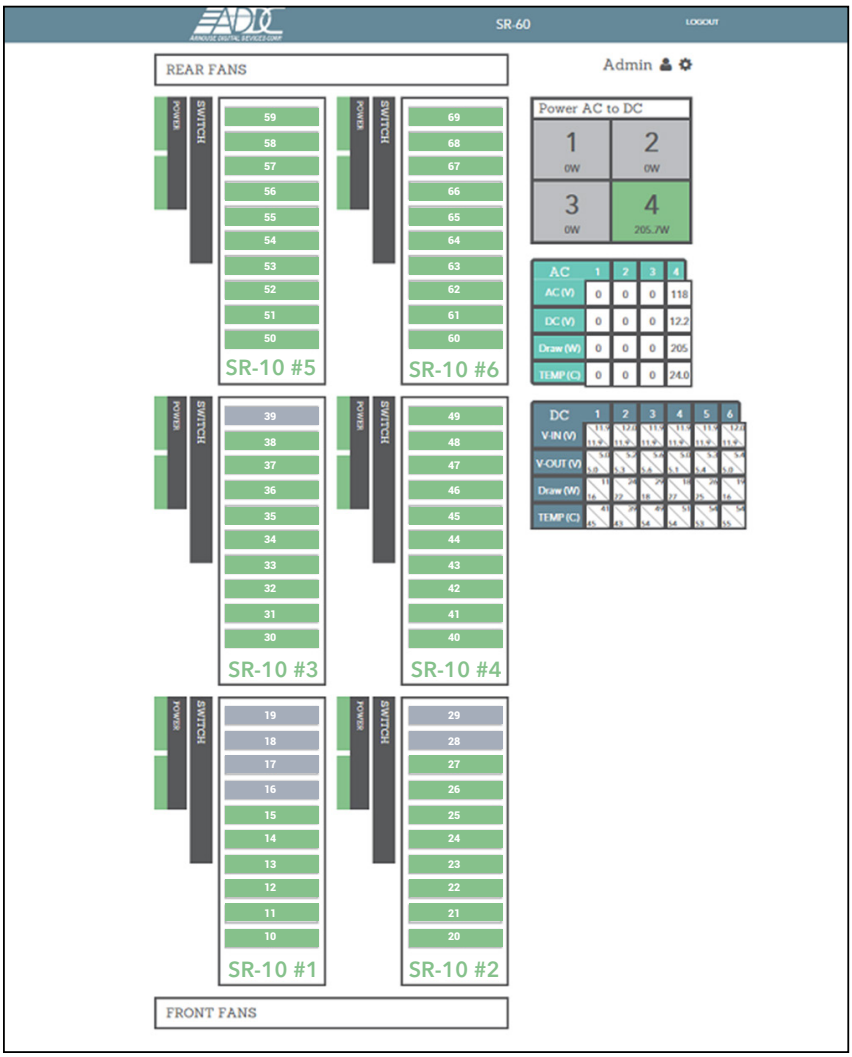
Section 4 - ROMWare Software

Section 4.1 - Login



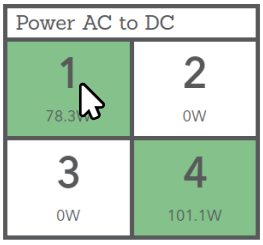
The web interface for ROMWare asks for credentials to log in and begin management and/or monitoring of your SR-60. Users are supplied with administrative credentials that have been factory set. Only one admin can be logged in at once.

Section 4.2 - Main Screen Overview

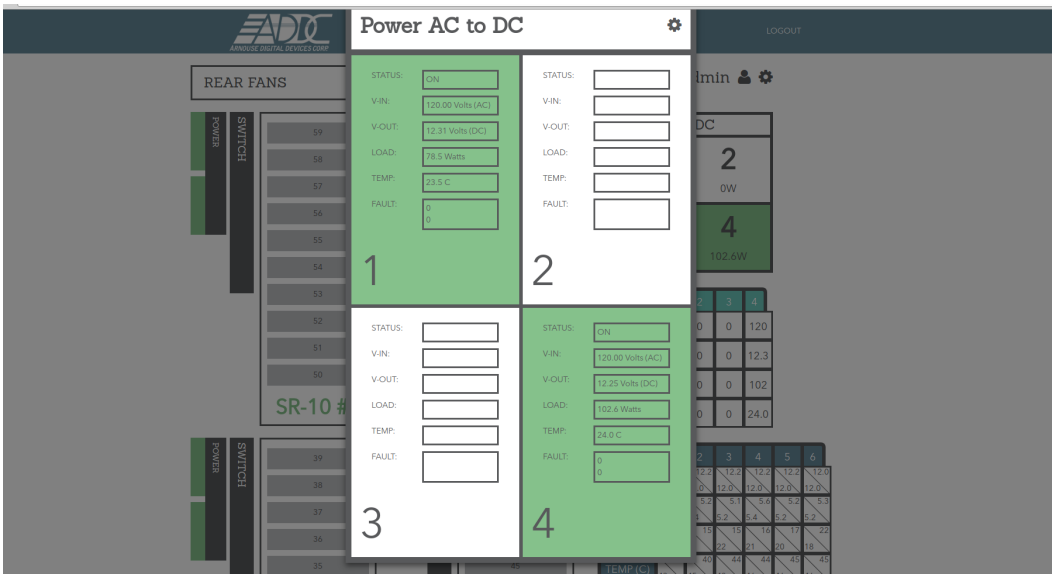


Section 4.3 - AC Power Monitoring

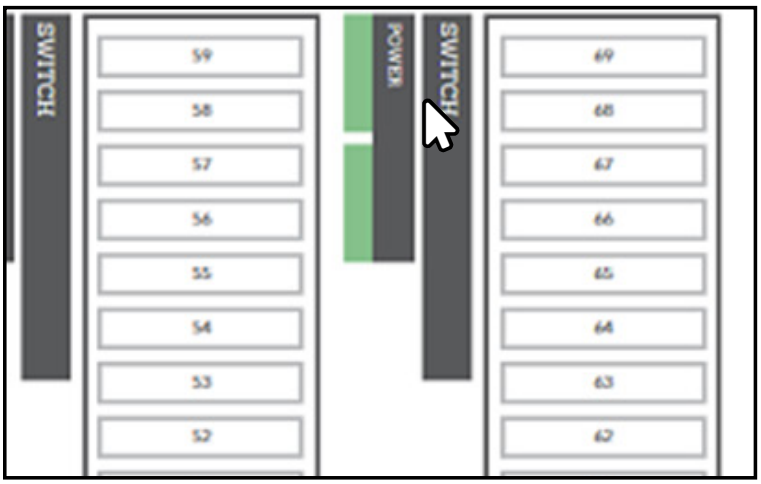
Information about the AC/DC Power Supplies can be shown by clicking the "Power AC to DC" GUI Element



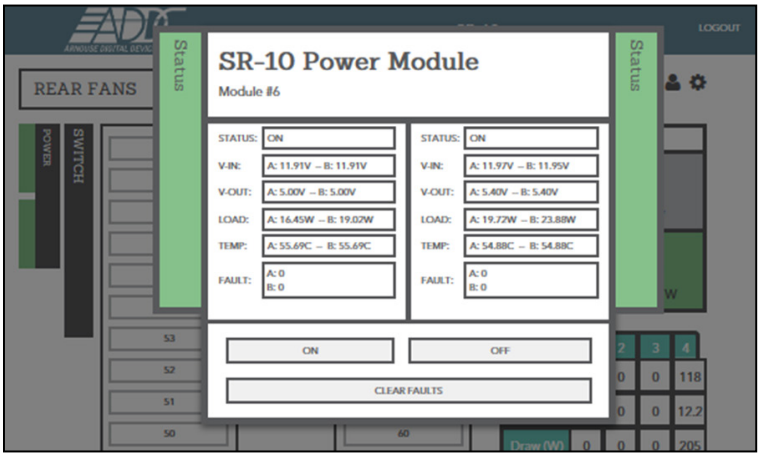
AC	1	2	3	4
AC (V)	119	0	0	119
DC (V)	12.3	0	0	12.3
Draw (W)	78	0	0	101
TEMP (C)	23.5	0	0	24.0



Section 4.4 - DC Power Control & Monitoring



To verify the SR-10's Power Supply is operating optimally, you can press the button labeled "Power" for more information

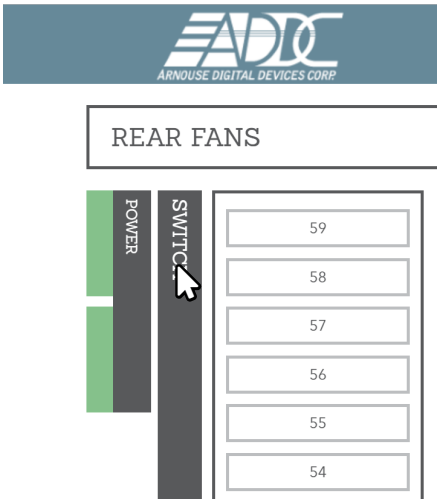


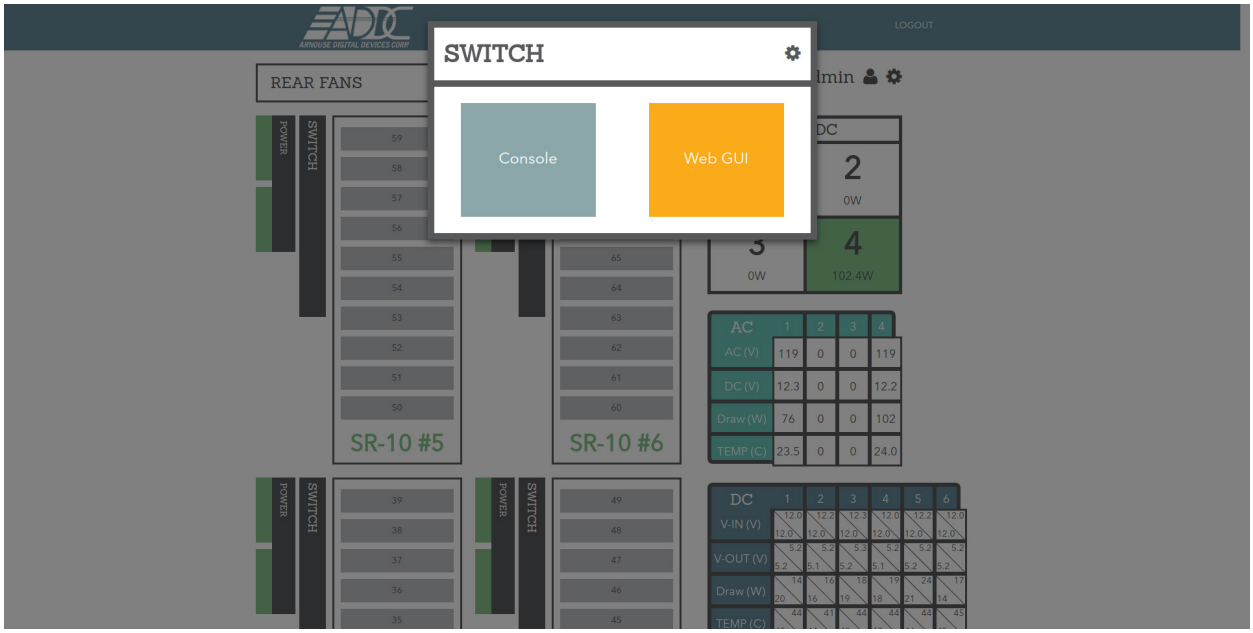
This screen shows various power related information and allows users to turn “On” and “Off” each SR-10 Power Module. “Clear Faults” will clear faults for this SR-10's power supply.

DC	1	2	3	4	5	6
V-IN (V)	12.0 / 12.0	12.2 / 12.0	12.3 / 12.0	12.0 / 11.9	12.5 / 12.0	12.0 / 12.0
V-OUT (V)	5.2 / 5.6	5.2 / 5.1	5.3 / 5.2	5.0 / 5.2	5.2 / 5.2	5.2 / 5.8
Draw (W)	24 / 22	15 / 16	16 / 18	18 / 12	22 / 11	16 / 23
TEMP (C)	44 / 44	41 / 44	44 / 48	46 / 46	45 / 46	45 / 46

Section 4.5 - SR-10 Switch Configuration

Displaying the switch management for selected SR-10 is done by clicking "Switch" on the SR-10 Module you would like to configure.



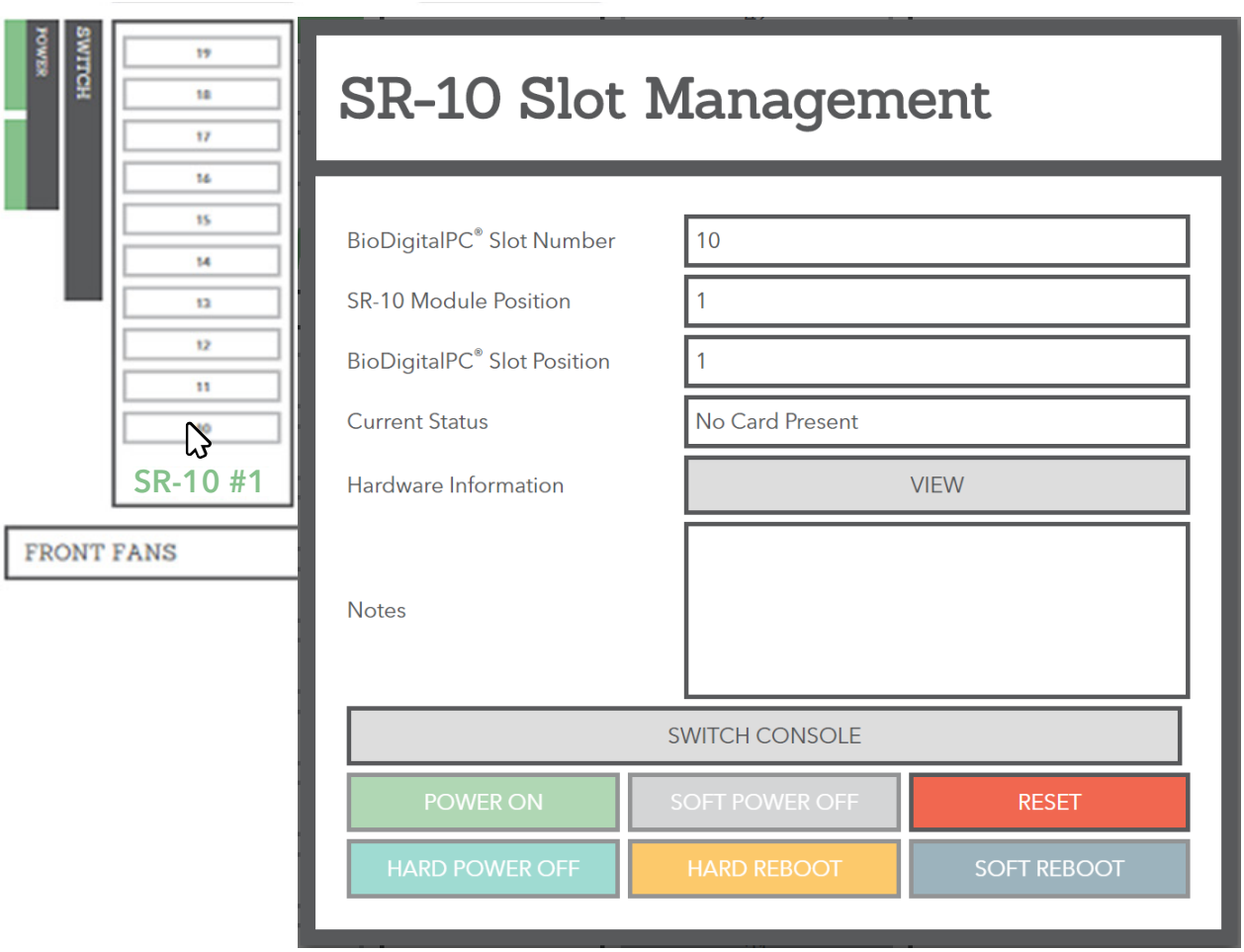


Console: Provide access to switch serial console via another Web GUI

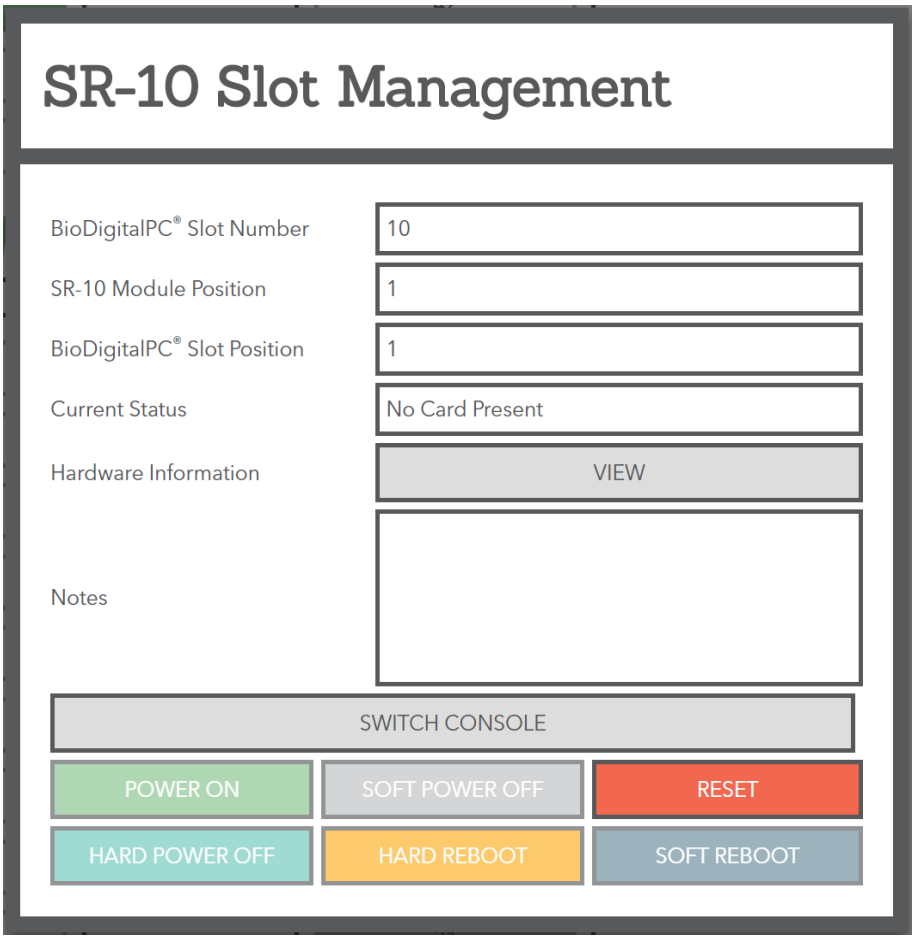
Web GUI: Graphical Interface for configuring the selected switch.

Section 4.6 - BioDigitalPC® Power Control & Monitoring

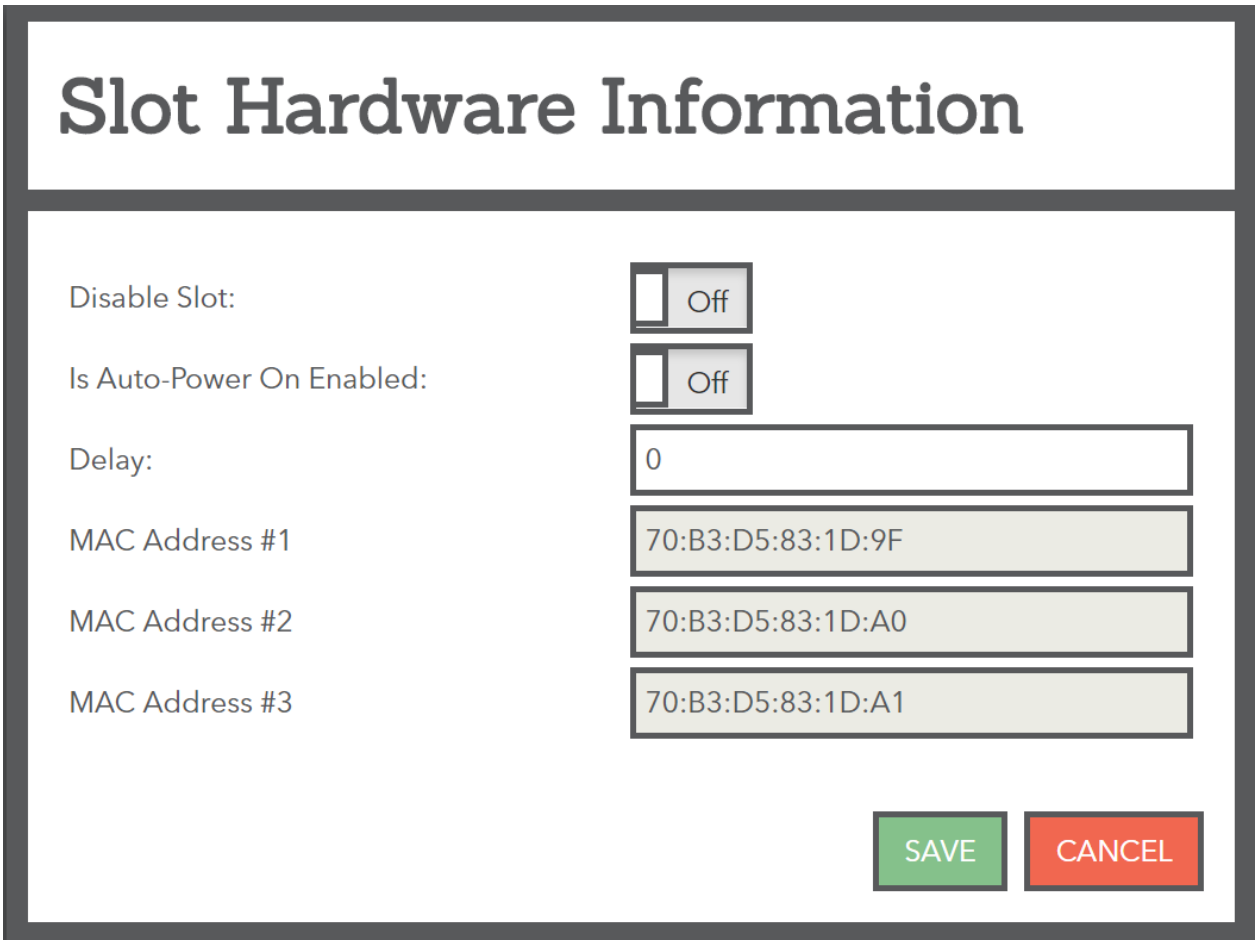
Displaying the card management features of the SR-60 is done by clicking the **Slot Number**.



POWER ON	Powers on the BioDigitalPC® Server card.
HARD POWER OFF	Immediately removes power from the BioDigitalPC® Server card.
SOFT POWER OFF	Sends a signal to the BioDigitalPC® Server card to shut down gracefully
HARD REBOOT	Removes power from the BioDigitalPC® Server card, waits 30 seconds and then applies power back to the BioDigitalPC® Server card.
RESET	Removes power from the remote power control. Do not use this unless specifically instructed to.
SOFT REBOOT	Gracefully reboots the BioDigitalPC® Server card.

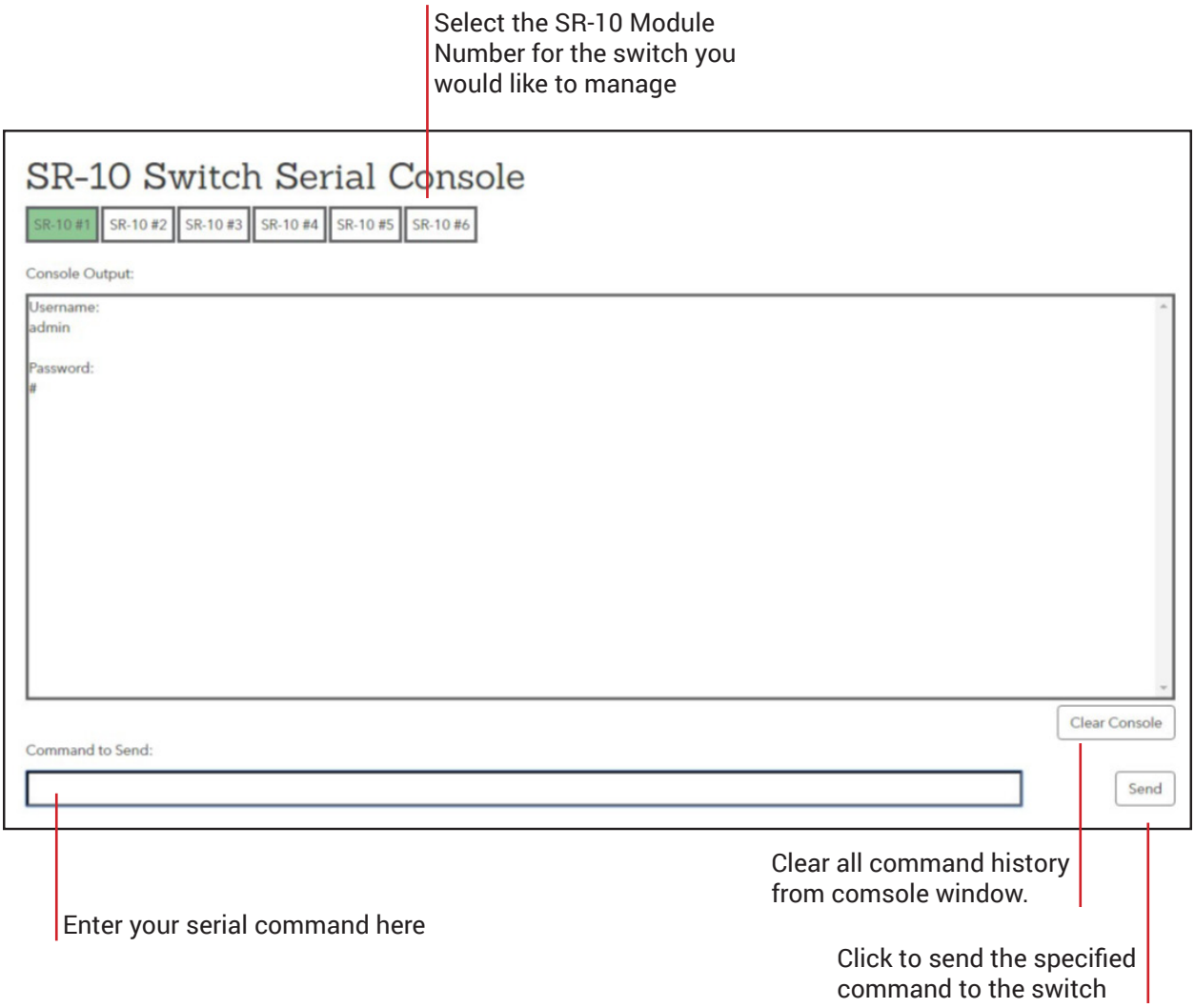


BioDigitalPC® Slot Number	The unique SR-60 slot number
SR-10 Module Position	The position number of the SR-10 Module within the SR-60
BioDigitalPC® Slot Position	The Position of the Slot within the SR-10
Current Status	Displays the current status of the slot: Present, Not Present, On and Off
Hardware Information	Click "View" to show the Slot Hardware Information. See the page 25 for more information.



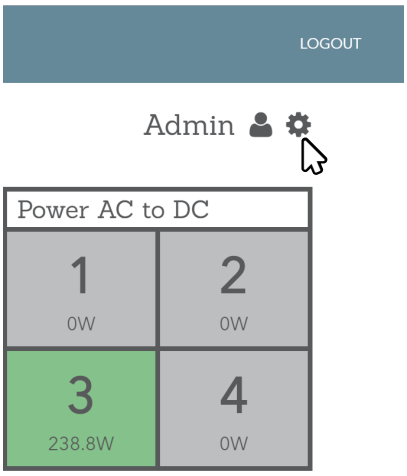
Disable Slot	Disables the slot for this SR-10 module.
Is Auto-Power On Enabled	With this enabled, after boot up of the SR-60 the BioDigitalPC® in this slot will be powered on (if present) after Delay number of seconds.
Delay	The number of seconds to wait after power up of the SR-60 before powering on the BioDigitalPC® (if present) in this slot.
MAC Address [1,2,3]	MAC addresses of the 3 1Gbps NICS for this slot.

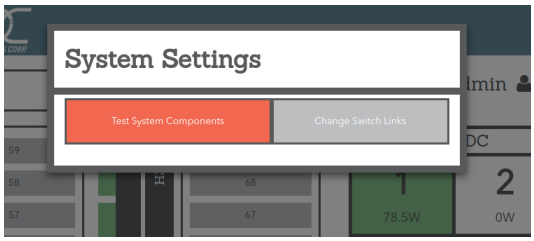
Section 4.7 - SR-10 Switch Serial Interface

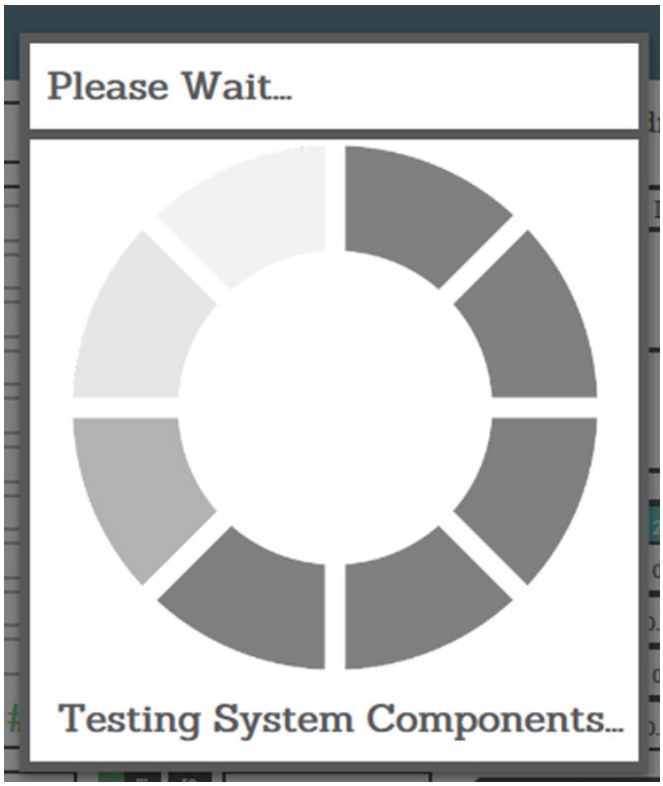


Appendix A - Run an SR-60 Component Test

Displaying the system components test for the SR-60 is done by clicking the gear symbol then selecting the Test System components button.

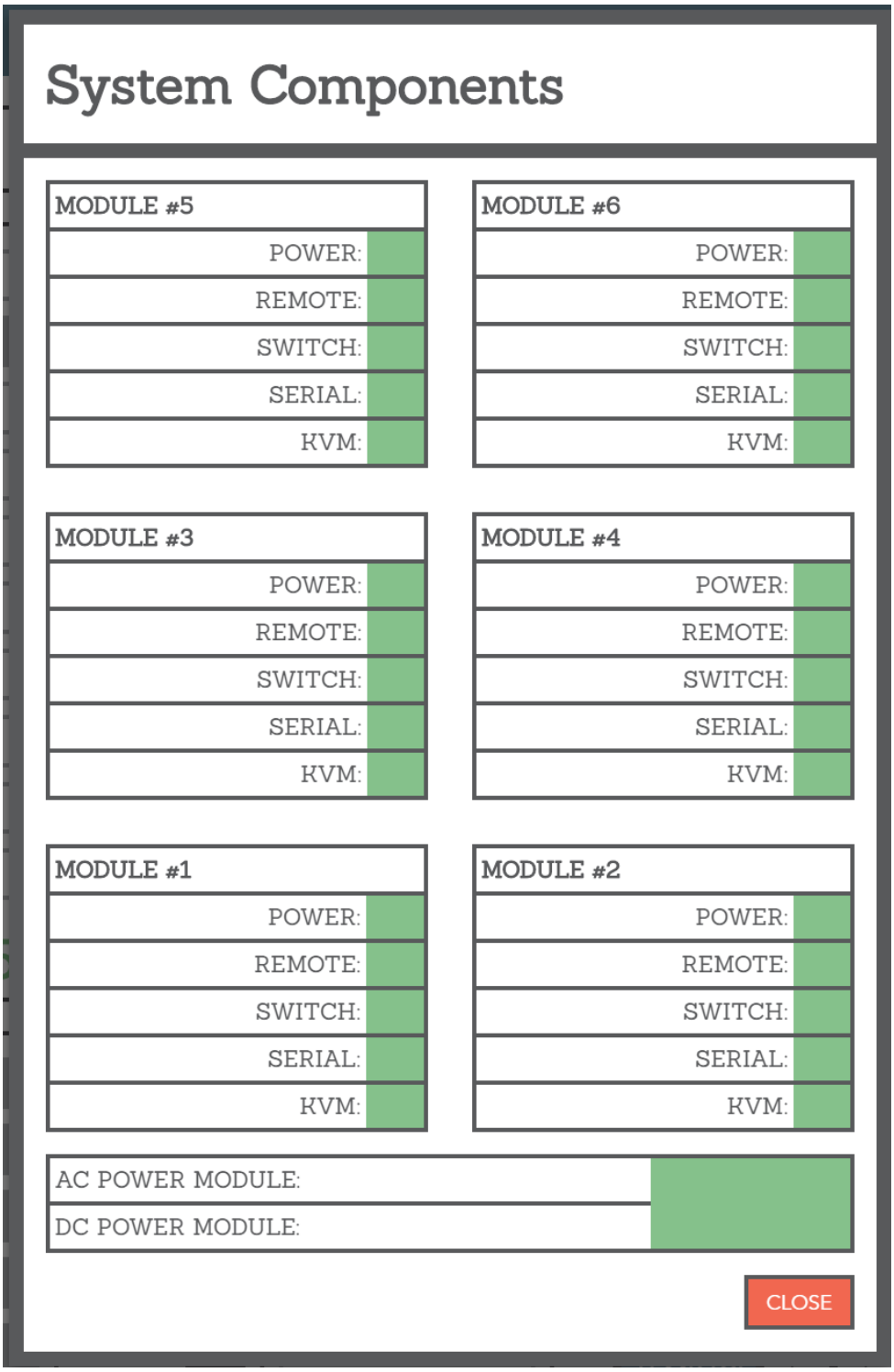






SR-60 is running a comprehensive test on system components. Results will be displayed on screen when completed.

Appendix B: A Successful SR-60 Component Test



If any field is shown as RED instead of as GREEN, please contact ADDC Support for further diagnostics and troubleshooting.

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