SR20-RM
USER GUIDE

PLUG INTO THE FUTURE OF TECHNOLOGY

ADDC | **ARNOUSE DIGITAL** DEVICES CORPORATION

Revision History

Revision	Notes
V2.3	Revision 2.3 was published in November of 2022.

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 SR20-RM 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 SR20-RM
Section 1.1 - What's in the Box?

SR20-RM Chassis
SR20-RM Top Cover

Equipment (Included)

- SR20-RM Chassis
- SR20-RM Top Cover [Comes Assembled]
- BioDigitalPC® Server Cards [Check Invoice for Quantity]
- 2 AC/DC Power Supplies
- 4 10Gbps SFP+ Cables
- 2 AC Power Cords
- 2 Rack Slides

Equipment (Not Included)

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

10Gbps SFP+ Cables

Rack Slides

AC/DC Power Supplies

AC Power Cords

Section 2 - SR20-RM Preparation

Section 2.1 - Preparing For Your SR20-RM

When installing the SR20-RM 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 12in (30.48cm) in front of the rack.
- Leave a minimum clearance of 8in (20.32cm) behind the rack.

Temperature Considerations
Your SR20-RM is designed to operate at room temperature with its self-contained cooling.

Power Considerations
When properly configured and installed the SR20-RM can draw up to 700 Watts (400 Watts on average) 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 <u>Section 2.6.2)</u>, each power source must be capable of supporting a maximum draw of 650 Watts.

# Section 2.2 - Installing Your SR20-RM into a Rack

This section provides information on installing the SR20-RM 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.
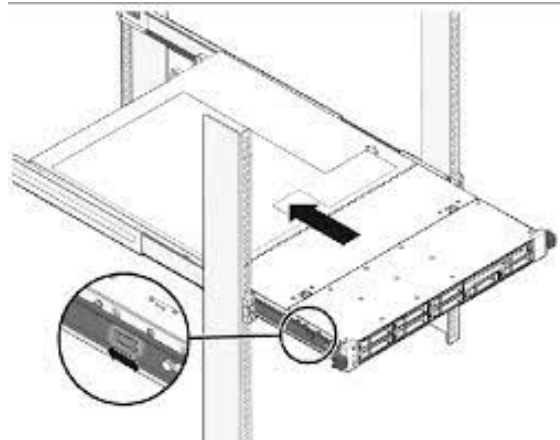
  Inner and outer chassis rails are shipped together, before continuing please seperate outer rail from inner rail.

A.
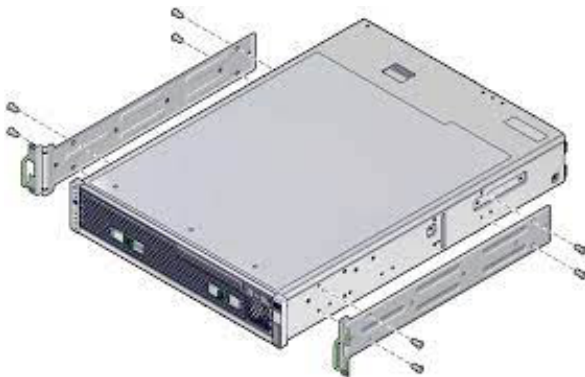
Mount Rack Slides on the SR20-RM

B.

Attached the inner rails to the server rack .
Once done, slide the SR20-RM onto the
server 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 SR20-RM System Cover and access any of the components inside the system.

Section 2.3.1 - Removing the SR20-RM Top Cover:

In order to add or remove BioDigitalPC®s the SR20-RM chassis can be pulled out of the rack, or the SR20-RM's Top Cover needs to be removed temporarily.

SR20-RM system can be running while installing new server cards.

Section 2.3.2 - Installing a BioDigitalPC®

latch

small locking tab

Fully inserted card

Step 1: Make sure the latch is perpendicular to the system cover.
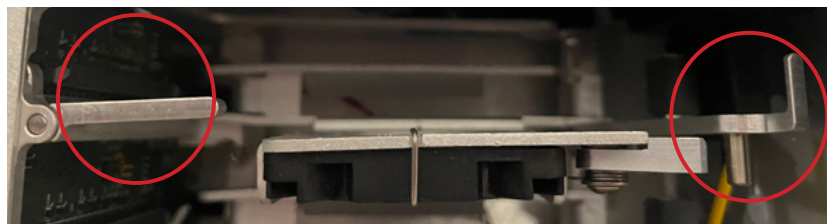
Step 2: Make sure locking tab is unlocked.

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.
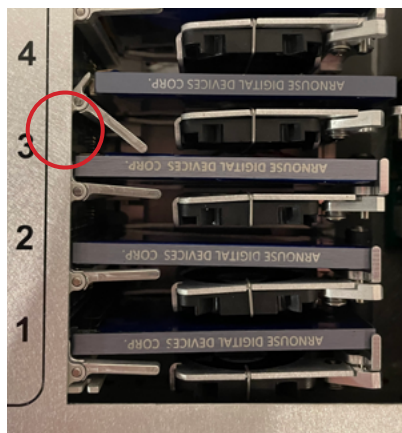
Section 2.3 - Installing Your BioDigitalPC®s

Section 2.3.3 - Removing a BioDigitalPC®
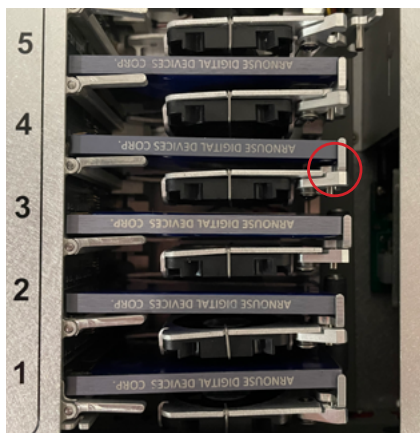
Step 1: Find the locking tab located to the right of the card slot.

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: Lift to remove the card from its slot

Section 2.3.4 - Replacing the SR20-RM Top Cover

Once complete, a technician should replace the SR20-RM Top Cover.

Section 2.4 - Installing Your SR20-RM Power Supplies

Handle

Tab

## Section 2.4.1 - Remove an SR20-RM Power Supply

1. Push SR20-RM Power Supply locking tab to the left.

2.While holding the locking tab, pull the SR20-RM Power Supply handle and remove.

Section 2.4.2 - Install an SR20-RM Power Supply

1. Locate an empty SR20-RM Power Supply bay

2. Push the SR20-RM Power Supply straight into the SR20-RM Chassis

3. Connect your AC Power Cord into the replacement SR20-RM Power Supply

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

 The SR20-RM requires one power supply for the system to operate optimally. Each power supply powers 10 PC cards.
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.
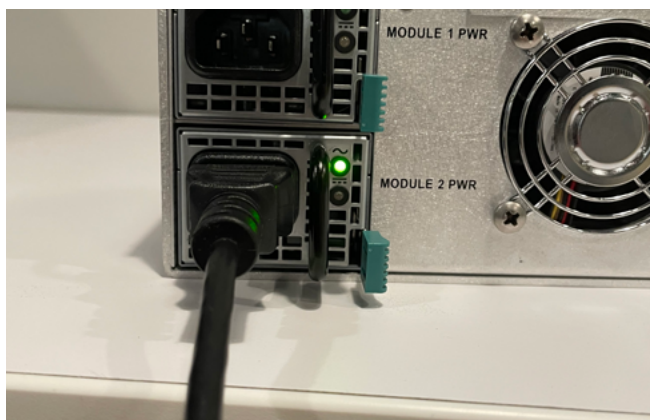
 After installing a new power supply allow several seconds for the system to recognize the new component. The power supply OK status indicator will turn green to signify that the power supply is functioning properly.

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

Section 2.5 - Networking Your SR20-RM

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
2 10/100 Ethernet Cables
1 10/100/1000 Ethernet Cables
2 1 port 10/100/1000 Ethernet Switch

RECOMMENDED

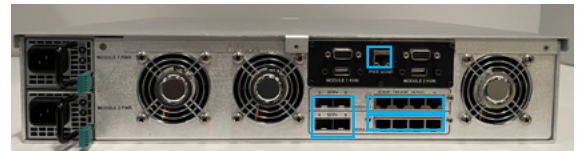Section 2.5.3 - 10Gbps Networking
(with ROMWare Switch Management)

3 10/100 Ethernet Cables
4 1 port (or more) 10/100 Ethernet Switch
2 10/100/1000 Ethernet Cables

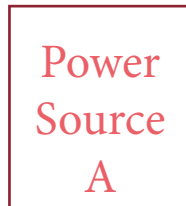Section 2.5.4 - 10Gbps Networking
(without Out of Band Switch Management)

All equipment found in Section 2.5.2, plus the following:

4 SFP+ 10Gbps Cables (included)
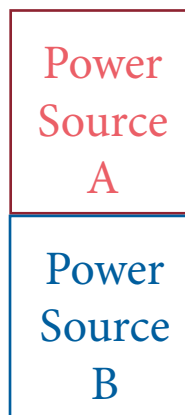
Section 2.6 - Power On Your SR20-RM

Section 2.6.1 - Single Feed Redundant Power Supply Configuration

<div style="text-align:center">

Power
Source
A

</div>

Section 2.6.2 - Dual Feed Redundant Power Supply Configuration

<div style="text-align:center">

Power
Source
A

Power
Source
B

</div>

Each Power Source must be capable of the maximum draw of 650W.

There is no power button.

Section 3 - SR20-RM Overview

Network Connections

Module Number

Module

Card Slot Number
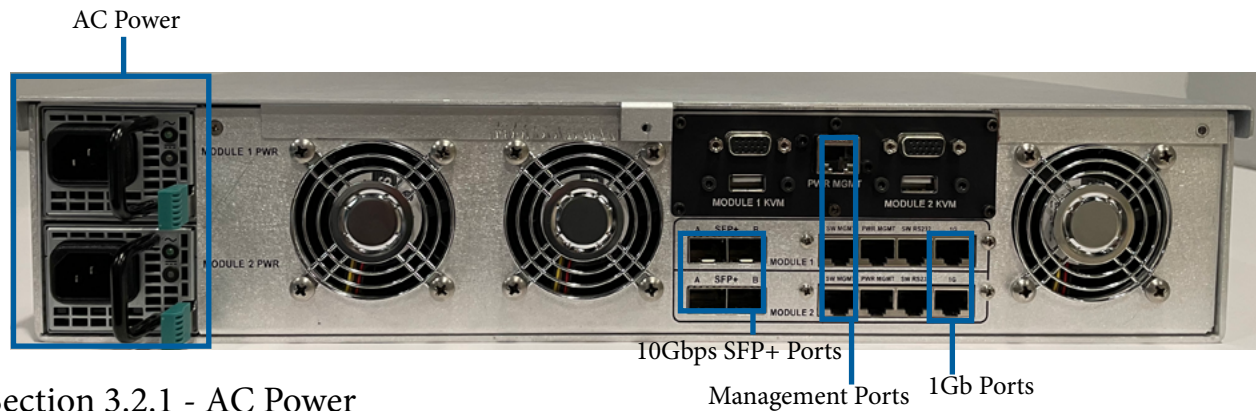
Front Interface

MODULE 1

MODULE 2

10
9
8
7
6
5
4
3
2
1
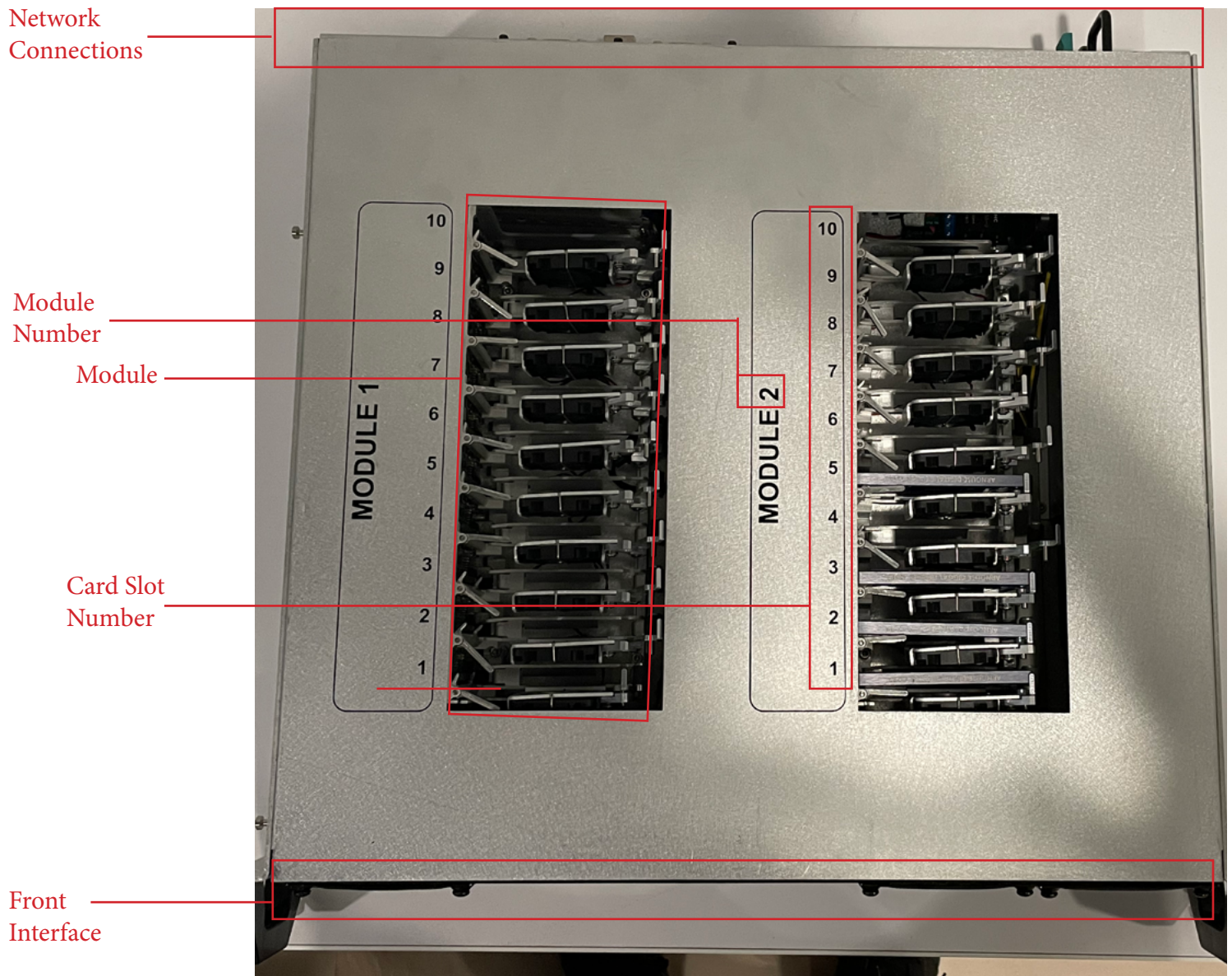
Section 3.1 - SR-10 Modules

As shown in the Section 3, the SR20-RM is broken up into two 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 SR20-RM (See Section 3.2 for additional information). Each SR-10's integrated switch and BioDigitalPC® power control are managed via the SR20-RM's Web-based management program called: ROMWare (See Section 4 for additional information).

Section 3.2 - Rear Panel

AC Power

10Gbps SFP+ Ports

Management Ports   1Gb Ports
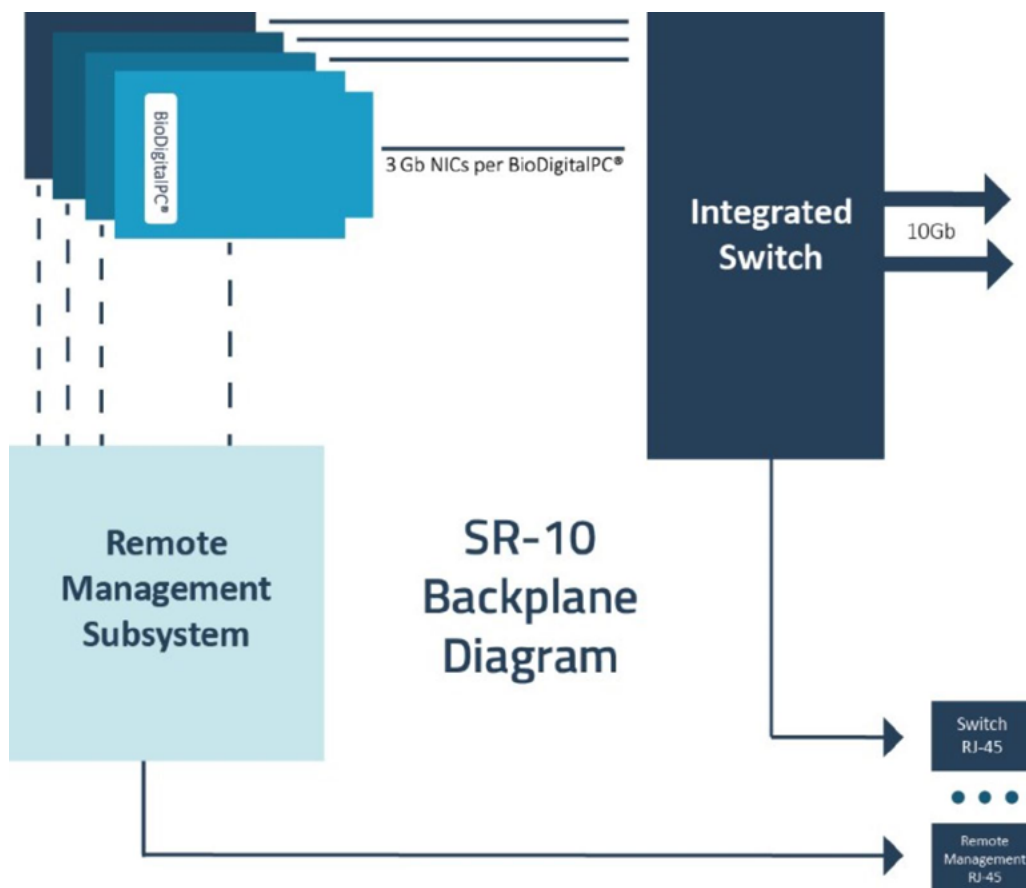
Section 3.2.1 - AC Power

1

2
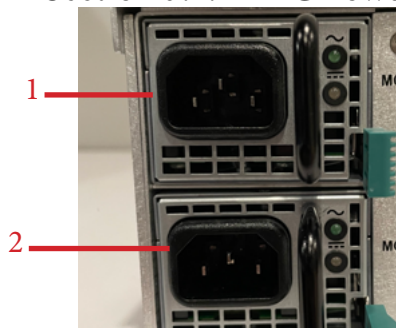
Section 3.2.2 - Management, Switch, and 10Gbps SFP+ Ports

KVM Modules Port

Remote Management and   1Gbps Ports

Switch Hardware Ports

10 Gbps SFP+ Ports

Section 3.3 - Front Panel

Module #1

Module #2

Touch Screen that can control each individual card: IE Reboot, shutdown, power on

10G-B: An SR-10's secondary 10Gbps SFP+ Port. Shown as Port #33 in the SR-10 Switch Web GUI

Module Power Buttons

10G-AUX: An SR-10's auxiliary one Gigabit. Shown as Port #31 in the SR-10 Switch Web GUI

10G-A: An SR-10's primary 10Gbps SFP+ Port. Shown as Port #32 in the SR-10 Switch Web GUI

10G-A 10G-B 10G-AUX   10G-A 10G-B 10G-AUX

An individual slot's 1Gbps NIC LEDs. One LED for each 1Gbps NIC

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 SR20-RM. 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

SR-60

LOGOUT

REAR FANS

Admin

Power AC to DC

1	2
0W	0W
3	4
0W	205.7W

AC	1	2	3	4
AC (V)	0	0	0	118
DC (V)	0	0	0	12.2
Draw (W)	0	0	0	205
TEMP (C)	0	0	0	24.0

DC	1	2	3	4	5	6
V-IN (V)						
V-OUT (V)						
Draw (W)						
TEMP (C)						

POWER SWITCH

SR-10 #5		SR-10 #6
59		69
58		68
57		67
56		66
55		65
54		64
53		63
52		62
51		61
50		60

SR-10 #3		SR-10 #4
39		49
38		48
37		47
36		46
35		45
34		44
33		43
32		42
31		41
30		40

SR-10 #1		SR-10 #2
19		29
18		28
17		27
16		26
15		25
14		24
13		23
12		22
11		21
10		20

FRONT FANS
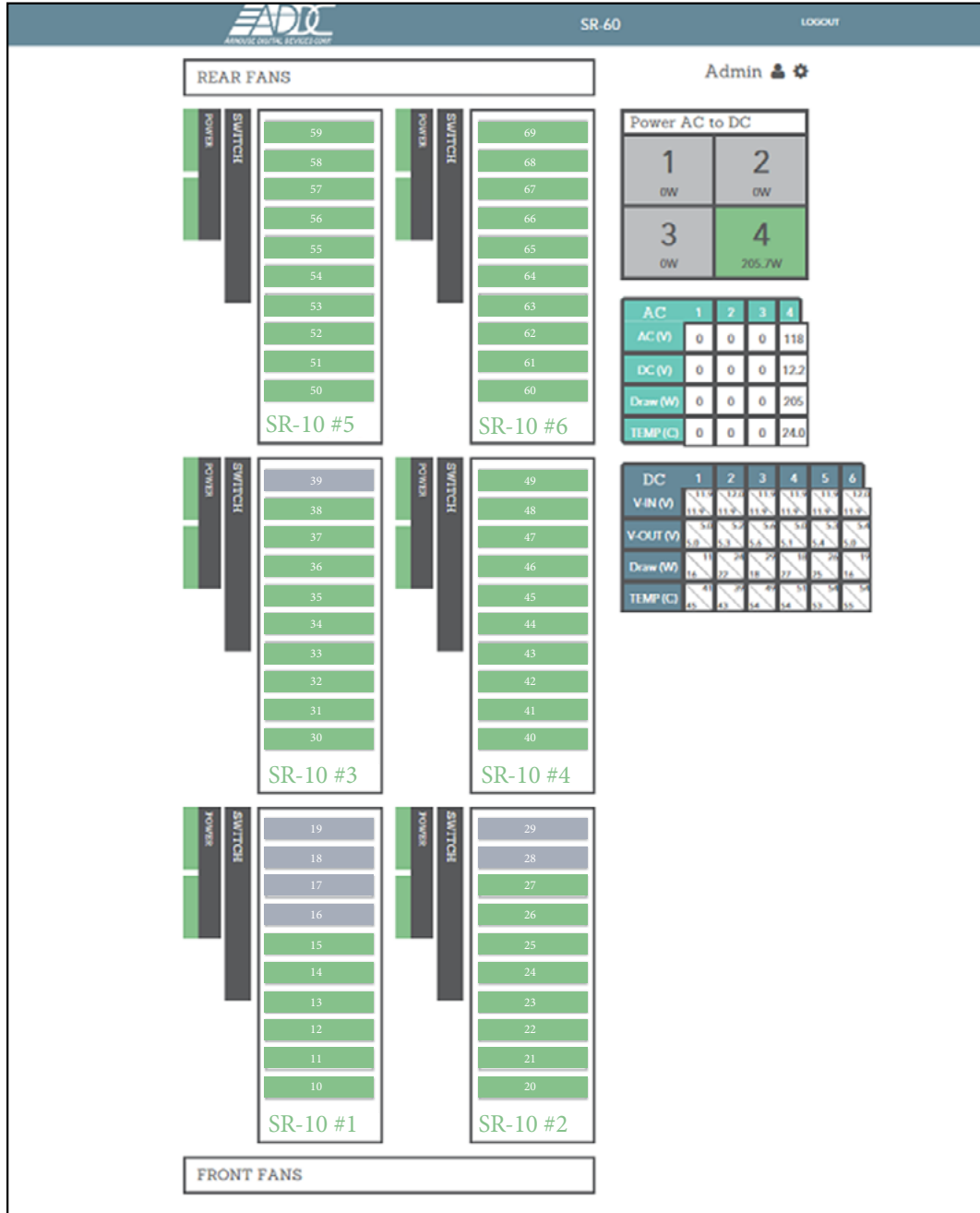
Section 4.3 - AC Power Monitoring

Information about the AC/DC Power Supplies can be shown by clicking the "Power AC to DC" GUI Element
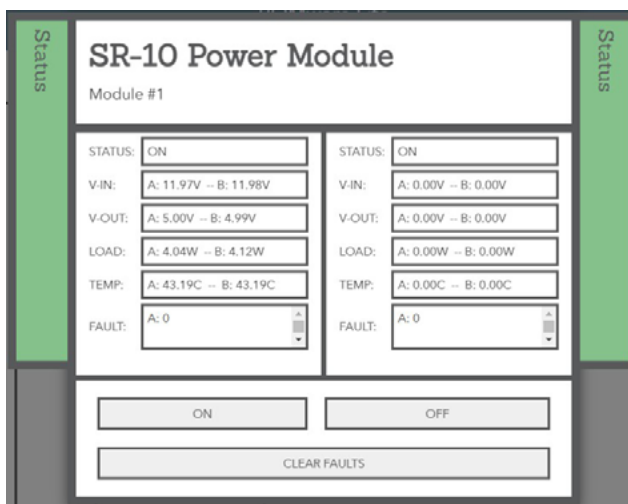
Section 4.4 - DC Power Control & Monitoring
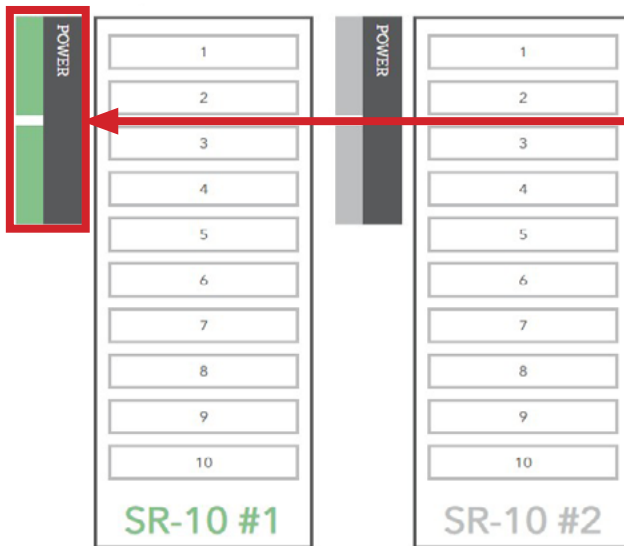
To verify the SR-10's Power Supply is operating optimally, you can press the button labeled "Power" for more information

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.

Clicking on a box will show more information regarding the current status of the DC Power Supplies.

Section 4.5 - BioDigitalPC® Power Control & Monitoring

Displaying the card management features of the SR20-RM is done by clicking the Slot Number.

SR-10 Slot Management

SR-10 Module Position	1
BioDigitalPC® Slot Position	1
BioDigitalPC® Slot Number	1
Current Status	NOT PRESENT
Hardware Information	VIEW
Notes	auto generated content

ENABLE KVM

POWER ON	SOFT POWER OFF	RESET
HARD POWER OFF	HARD REBOOT	SOFT REBOOT

Button	Description
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.

Section 4.5 - BioDigitalPC® Power Control & Monitoring

BioDigitalPC® Slot Number	The unique SR20-RM slot number
SR-10 Module Position	The position number of the SR-10 Module within the SR20-RM
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.

Section 4.5 - BioDigitalPC® Power Control & Monitoring

Slot Hardware Information

Disable Slot:	Off
Is Auto-Power On Enabled:	Off
Delay:	0
MAC Address #1	70:B3:D5:83:1D:9F
MAC Address #2	70:B3:D5:83:1D:A0
MAC Address #3	70:B3:D5:83:1D:A1

SAVE CANCEL

Disable Slot	Disables the slot for this SR-10 module.
Is Auto-Power On Enabled	With this enabled, after boot up of the SR20-RM 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 SR20-RM before powering on the BioDigitalPC® (if present) in this slot.
MAC Address [1,2]	MAC addresses of the 2 1Gbps NICS for this slot.

Section 4.6 - SR-10 Switch Serial Interface

Select the SR-10 Module Number for the switch you would like to manage

SR-10 Switch Serial Console

SR-10 #1 | SR-10 #2 | SR-10 #3 | SR-10 #4 | SR-10 #5 | SR-10 #6

Console Output:

Username:
admin

Password:
#

Clear Console

Command to Send:

Send

Clear all command history from comsole window.

Enter your serial command here

Click to send the specified command to the switch

Appendix A - Run an SR20-RM Component Test

Displaying the system components test for the SR20-RM is done by clicking the gear symbol then selecting the Test System components button.
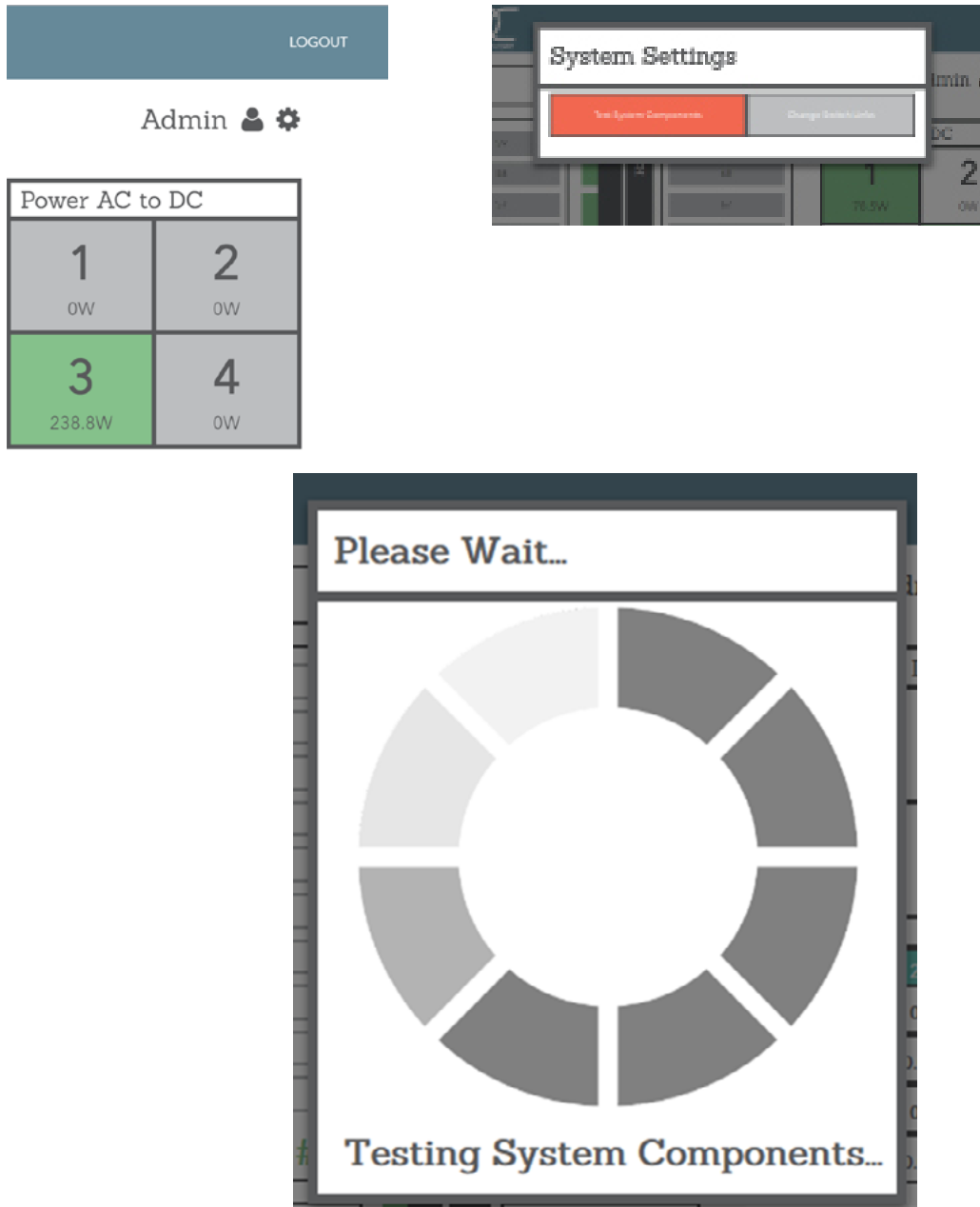
SR-20RM is running a comprehensive test on system components. Results will be displayed on screen when completed.

Appendix B: A Successful SR-20RM Component Test

System Components

MODULE #5		MODULE #6	
POWER:	🟩	POWER:	🟩
REMOTE:	🟩	REMOTE:	🟩
SWITCH:	🟩	SWITCH:	🟩
SERIAL:	🟩	SERIAL:	🟩
KVM:	🟩	KVM:	🟩

MODULE #3		MODULE #4	
POWER:	🟩	POWER:	🟩
REMOTE:	🟩	REMOTE:	🟩
SWITCH:	🟩	SWITCH:	🟩
SERIAL:	🟩	SERIAL:	🟩
KVM:	🟩	KVM:	🟩

MODULE #1		MODULE #2	
POWER:	🟩	POWER:	🟩
REMOTE:	🟩	REMOTE:	🟩
SWITCH:	🟩	SWITCH:	🟩
SERIAL:	🟩	SERIAL:	🟩
KVM:	🟩	KVM:	🟩

AC POWER MODULE:	🟩
DC POWER MODULE:	

CLOSE

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