SR-20RM

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 February 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 SR-20 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 SR-20RM

Section 1.1 - What's in the Box?

SR-20RM Chassis
SR-20RM Top Cover

Equipment (Included)

- SR-20RM Chassis
- SR-20RM 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 - SR-20RM Preparation

Section 2.1 - Preparing For Your SR-20RM

When installing the SR-20RM 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 SR-20RM is designed to operate at room temperature with its self-contained cooling.

Power Considerations
When properly configured and installed the SR-20RM can draw up to 800 Watts 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 650 Watts.

Section 2.2 - Installing Your SR-20RM into a Rack

This section provides information on installing the SR-20RM 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.
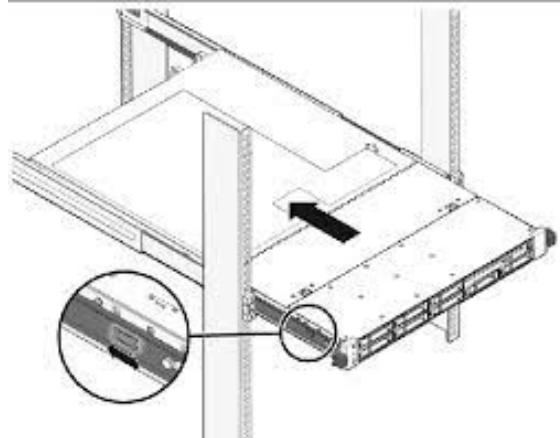
Inner and outer chassis rails are shipped together, before continuing please seperate outer rail from inner rail.

A.
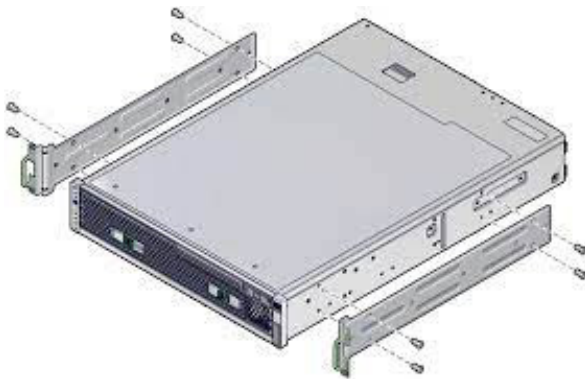
Mount Rack Slides on the
SR-20RM

B.

Attached the inner rails to the
server rack .
Once done, slide the SR-20RM
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 SR-20RM System Cover and access any of the components inside the system.

## Section 2.3.1 - Removing the SR-20RM Top Cover:

In order to add or remove BioDigitalPC®s the SR-20RM chassis can be pulled out of the rack, or the SR-20RM's Top Cover needs to be removed temporarily.

SR-20RM 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.
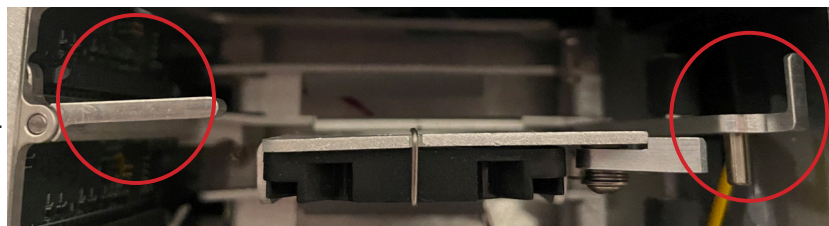
Step 2: Make sure locking tab is unlocked.

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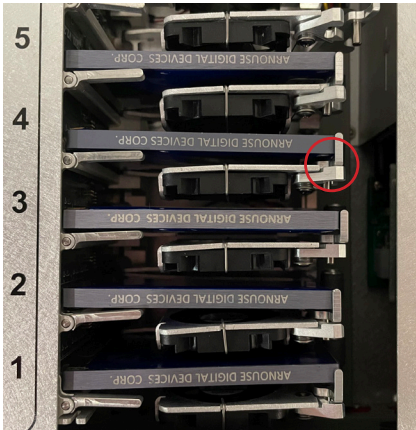
Step 4: Once the card is in between the two horizonal bars, locate the small locking tab and push it in towards the card. The card should now be locked into place.

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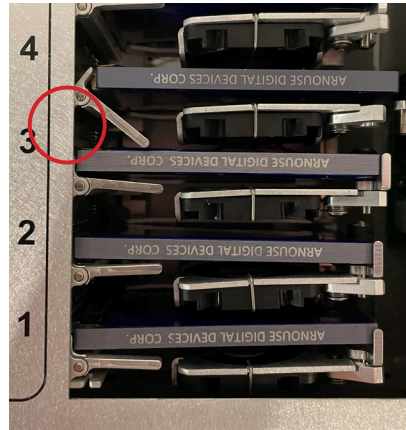
Step 2: Pull the ejection bar forward towards you, you should feel the card pop out of the connector.

Step 3: Lift to remove the card from its slot

Section 2.3.4 - Replacing the SR-20RM Top Cover

Once complete, a technician should replace the SR-20RM Top Cover.

Section 2.4 - Installing Your SR-20RM Power Supplies

Handle

Tab

Section 2.4.1 - Remove an SR-20RM Power Supply

1. Push SR-20RM Power Supply locking tab to the left.

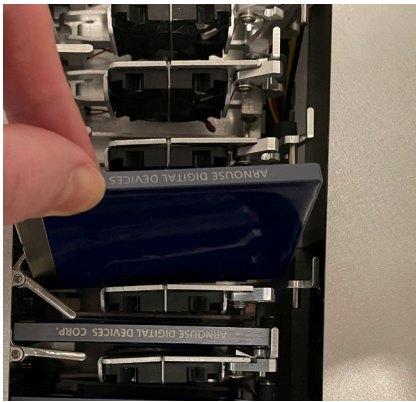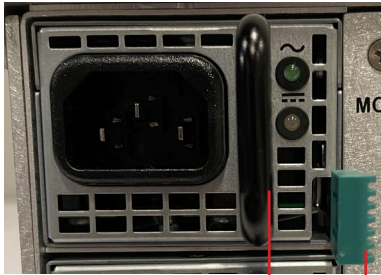2. While holding the locking tab, pull the SR-20RM Power Supply handle and remove.

Section 2.4.2 - Install an SR-20RM Power Supply

1. Locate an empty SR-20RM Power Supply bay

2. Push the SR-20RM Power Supply straight into the SR-20RM Chassis

3. Connect your AC Power Cord into the replacement SR-20RM Power Supply

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

The SR-20RM 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.
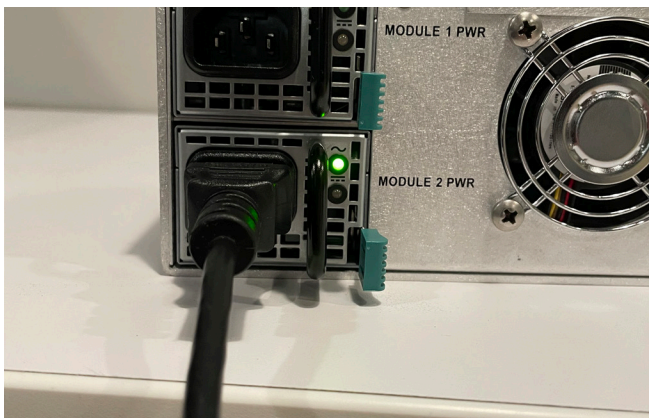
After installing a new power supply allow several seconds for the system to recognize the new component. The power supply OK status indicator will turn green to signify that the power supply is functioning properly.

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

Section 2.5 - Networking Your SR-20RM

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 SR-20RM

Section 2.6.1 - Single Feed Redundant Power Supply Configuration

> Power
> Source
> A

Section 2.6.2 - Dual Feed Redundant Power Supply Configuration

> Power
> Source
> A
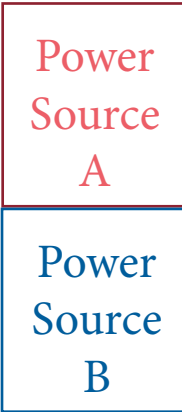
> Power
> Source
> B

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

There is no power button.

Section 3 - SR-20RM Overview

Network Connections

Module Number

Module

Card Slot Number

MODULE 1

MODULE 2

10
9
8
7
6
5
4
3
2
1

Front Interface
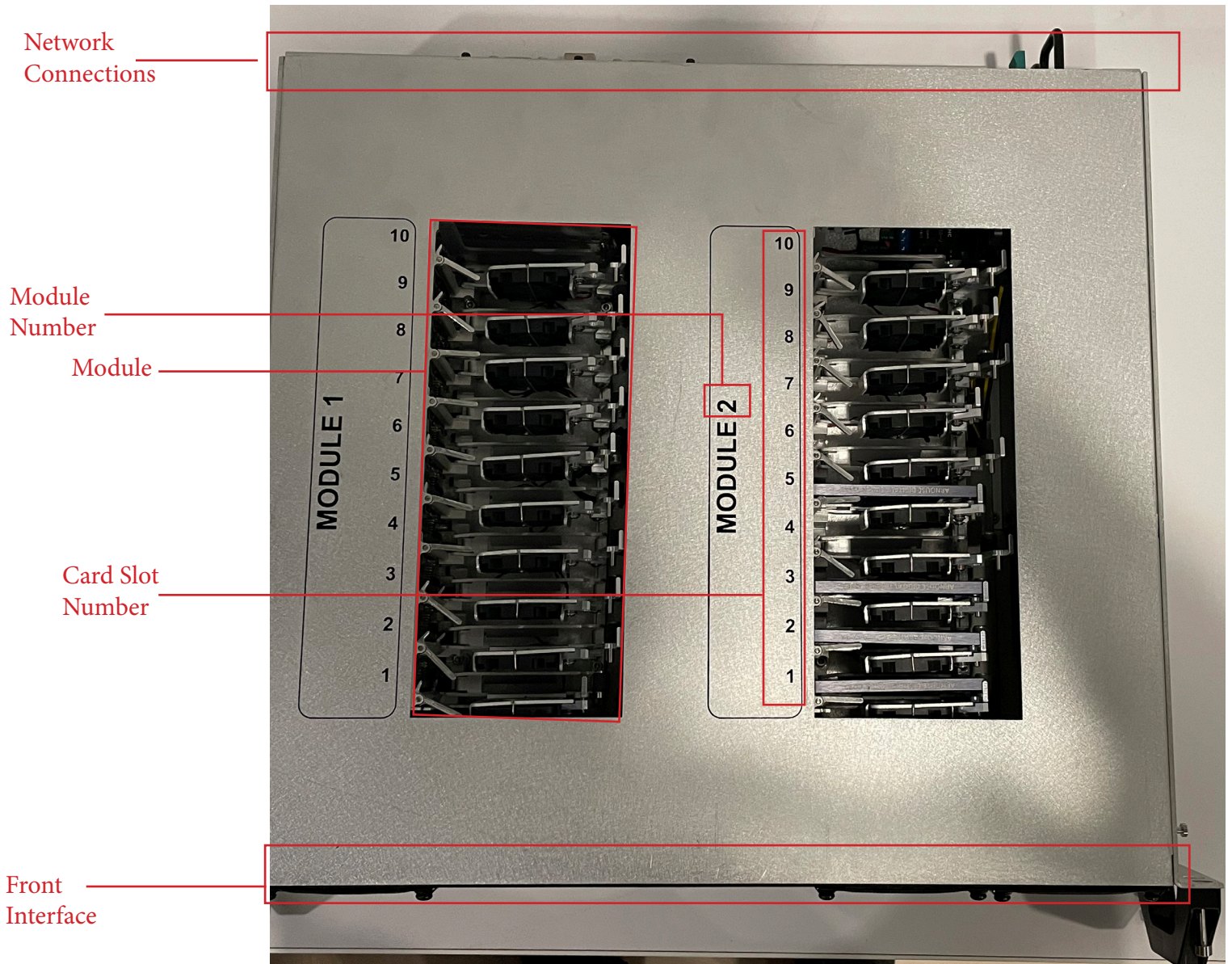
Section 3.1 - SR-10 Modules

As shown in the Section 3, the SR-20RM 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 SR-20RM (See Section 3.2 for additional information). Each SR-10's integrated switch and BioDigitalPC® power control are managed via the SR-20RM's Web-based management program called: ROMWare (See Section 4 for additional information).

SR-10 Backplane Diagram

Section 3.2 - Rear Panel

AC Power

10Gbps SFP+ Ports
Switch Management Ports
Power Management Ports (ROMware)

1Gb Ports
RS232 Switch Serial Management Ports
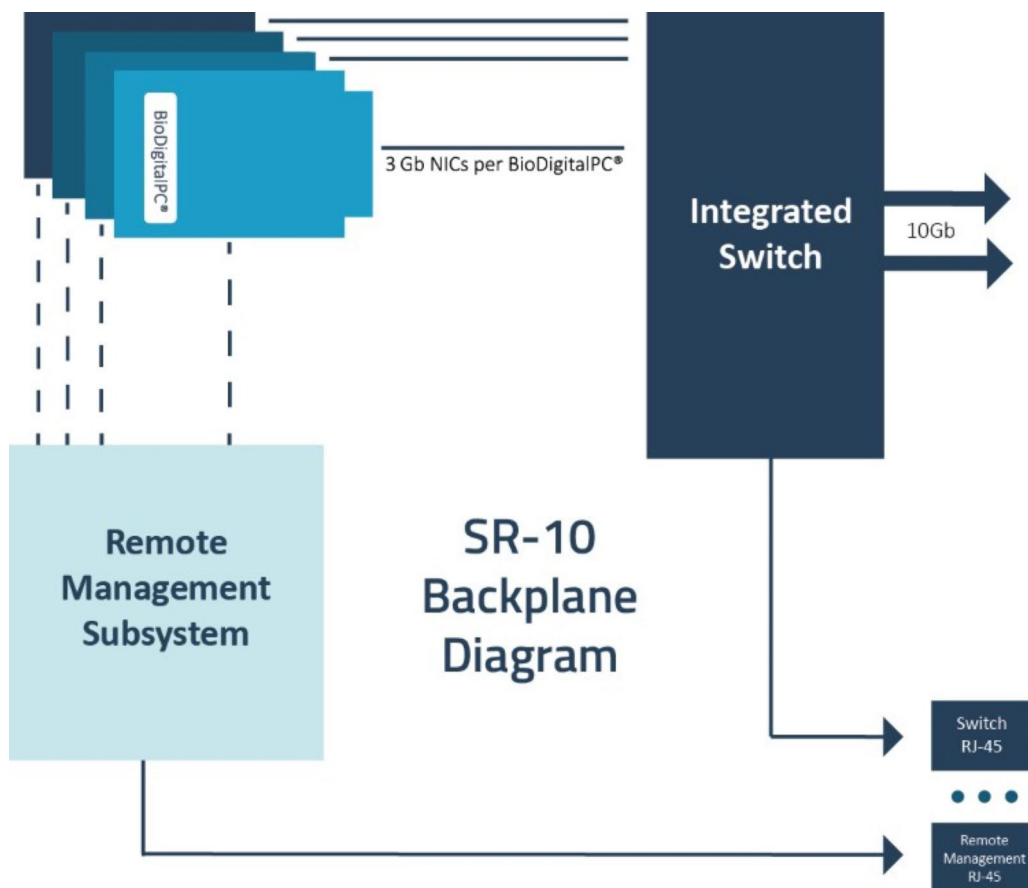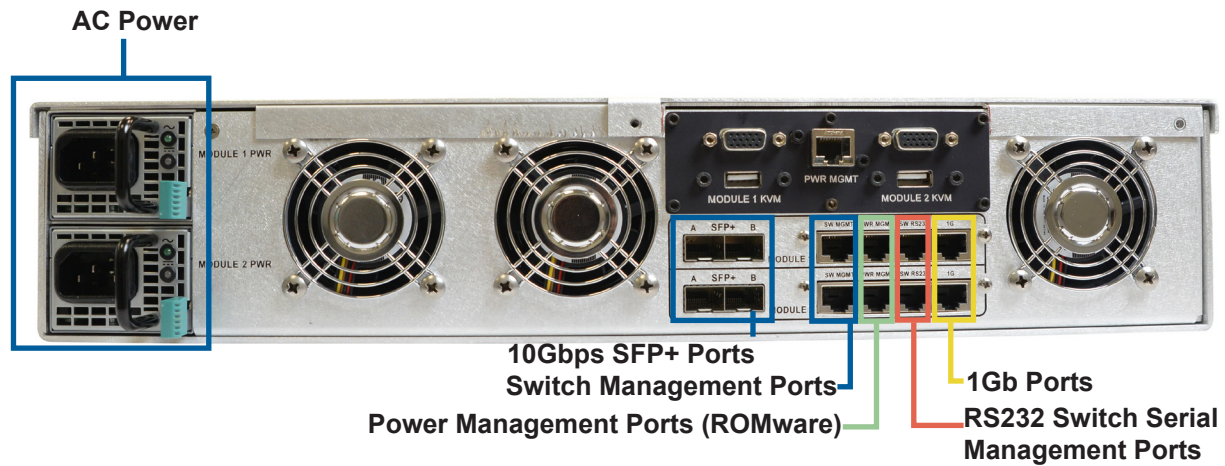
Section 3.2.1 - AC Power

1

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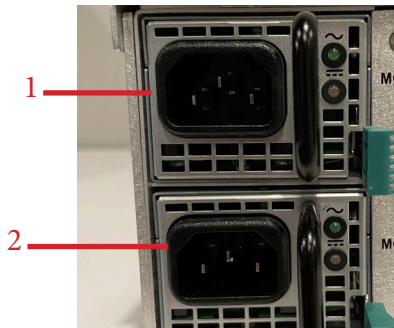
Section 3.2.2 - Management, Switch, and 10Gbps SFP+ Ports

KVM Modules Port

Remote Management and Switch Hardware Ports   1Gbps Ports

10 Gbps SFP+ Ports

Section 3.3 - Front Panel

Module #1

Module #2

Touch Screen that can control each individual card: I.E. Reboot, shutdown, power on

Module Power Buttons

10G-B: An SR-10's secondary 10Gbps SFP+ Port.

10G-A: An SR-10's primary 10Gbps SFP+ Port.

1G-AUX: An SR-10's auxiliary one Gigabit.

| 10G-A | 10G-B | 1G-AUX | 10G-A | 10G-B | 1G-AUX |

An individual slot's 1Gbps NIC LEDs. One LED for each 1Gbps NIC
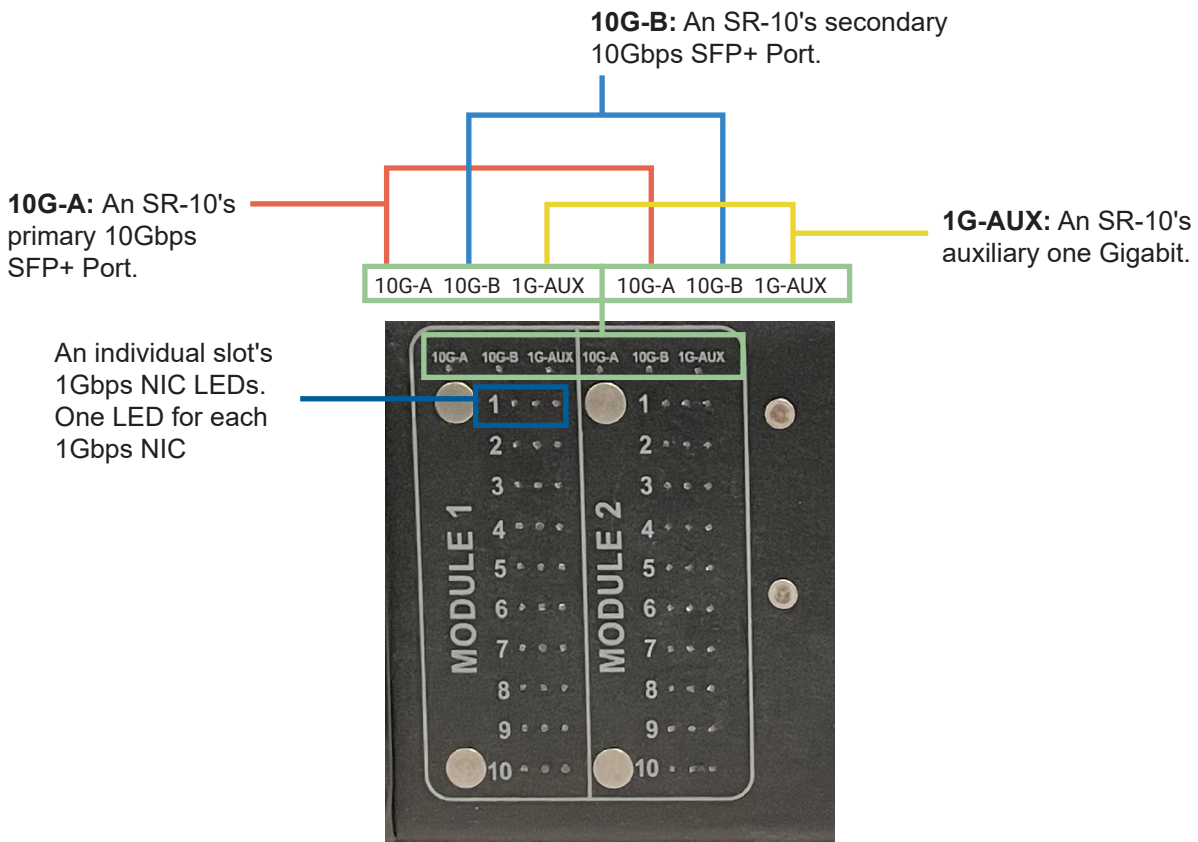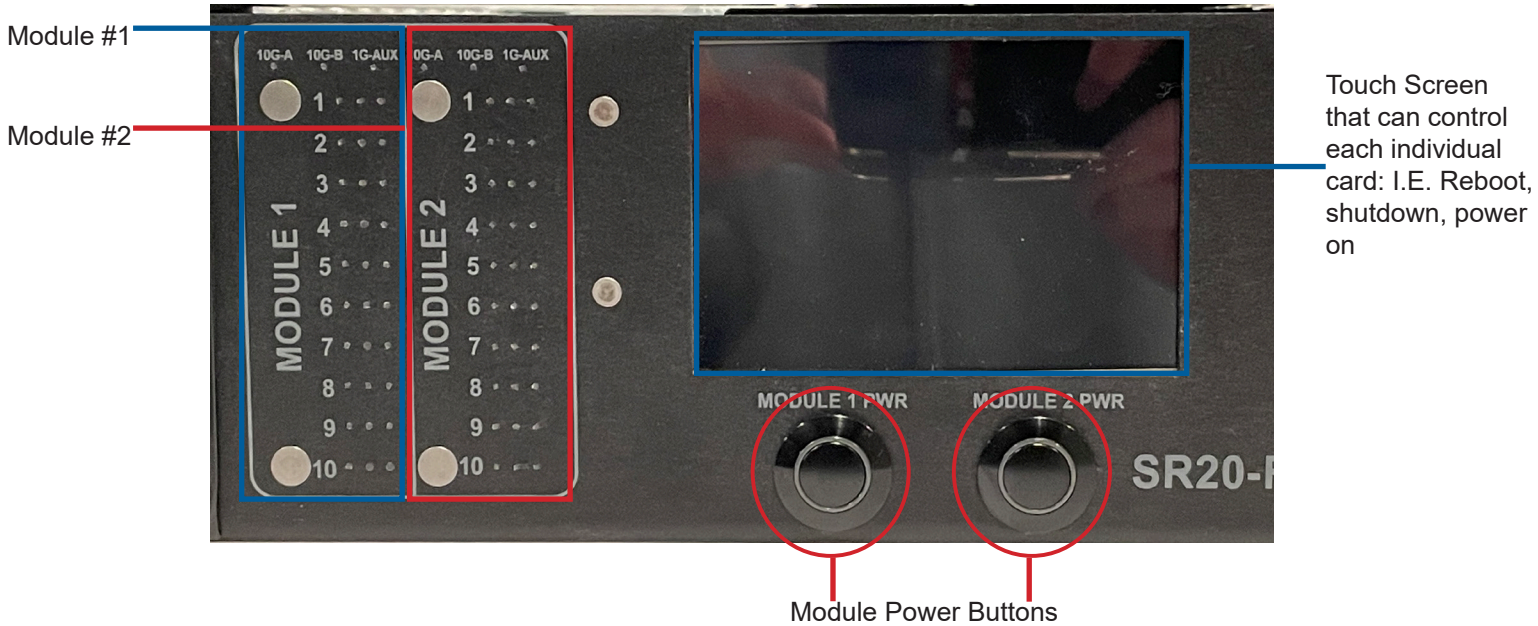
Section 4 - ROMware Software

Section 4.1 - Login

The web interface for ROMWare asks for credentials to log in and begin management and/or monitoring of your SR-20RM. Users are supplied with administrative credentials that have been factory set. Only one admin can be logged in at once, through the IP 10.0.1.254.

Section 4.2 - Main Screen Overview

Section 4.3 - DC Power Control & Monitoring

Controlling FDD: 10.0.1.254

POWER

| 1 |
| 2 |
| 3 |
| 4 |
| 5 |
| 6 |
| 7 |
| 8 |
| 9 |
| 10 |

SR-10 #1

POWER

| 1 |
| 2 |
| 3 |
| 4 |
| 5 |
| 6 |
| 7 |
| 8 |
| 9 |
| 10 |

SR-10 #2

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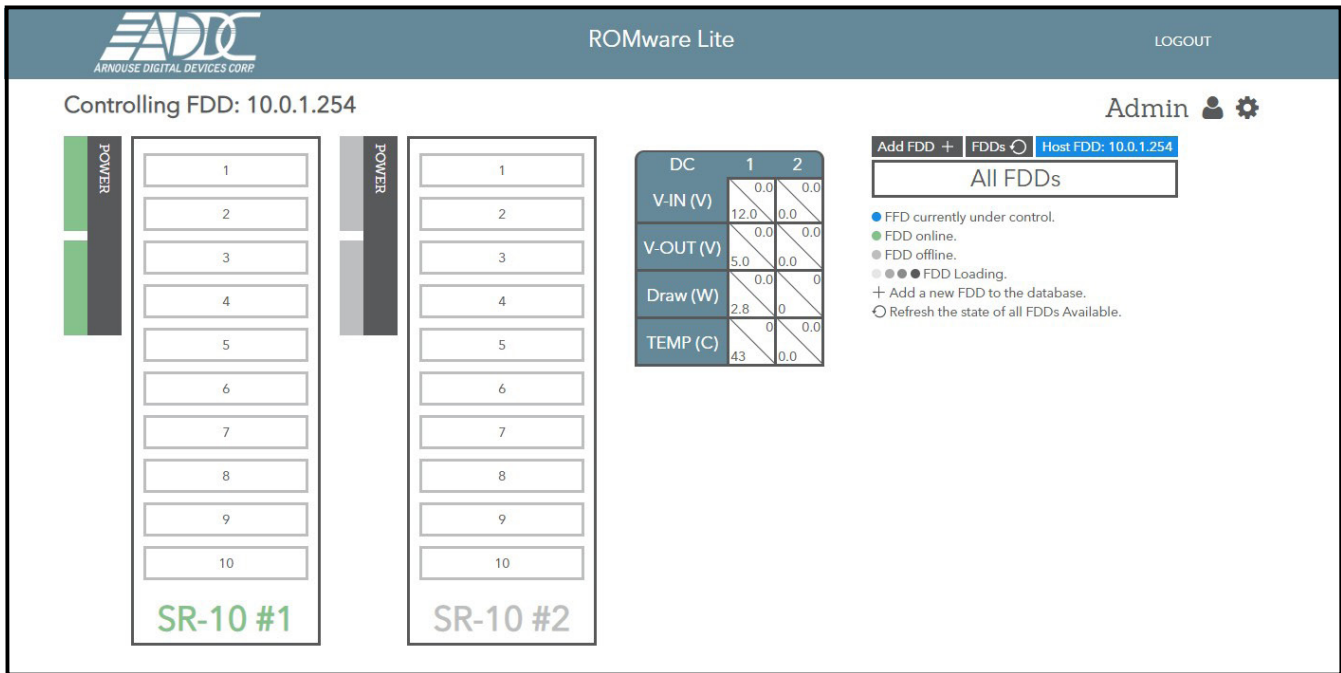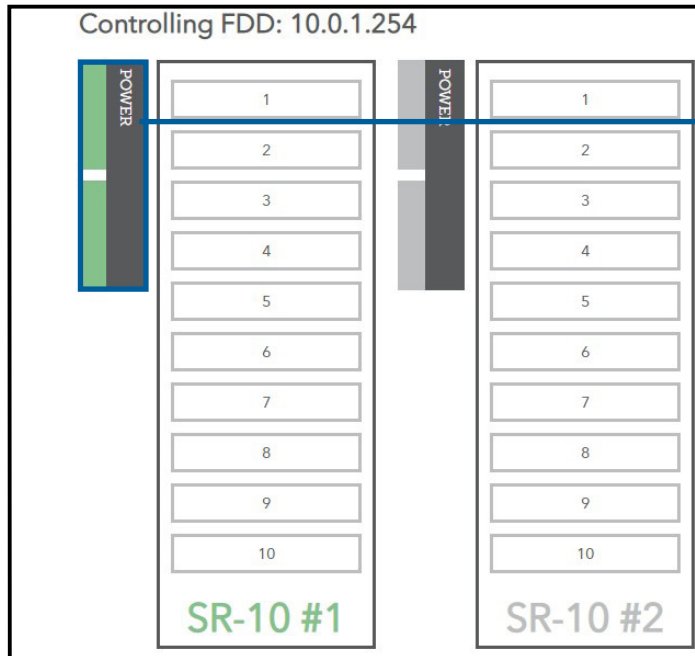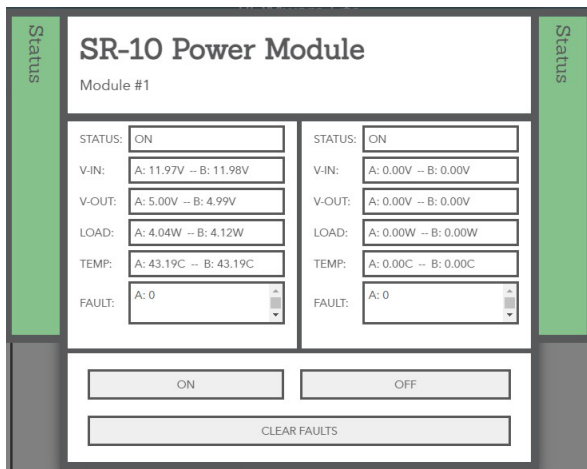
SR-10 Power Module

Module #1

Status

	Left	Right
STATUS:	ON	ON
V-IN:	A: 11.97V -- B: 11.98V	A: 0.00V -- B: 0.00V
V-OUT:	A: 5.00V -- B: 4.99V	A: 0.00V -- B: 0.00V
LOAD:	A: 4.04W -- B: 4.12W	A: 0.00W -- B: 0.00W
TEMP:	A: 43.19C -- B: 43.19C	A: 0.00C -- B: 0.00C
FAULT:	A: 0	A: 0

ON   OFF

CLEAR FAULTS

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
V-IN (V)	0.0 / 12.0	0.0 / 0.0
V-OUT (V)	0.0 / 5.0	0.0 / 0.0
Draw (W)	0.0 / 2.9	0 / 0
TEMP (C)	0 / 43	0.0 / 0.0

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

Section 4.4 - BioDigitalPC® Power Control & Monitoring

Displaying the card management features of the SR-20RM 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 4.4 - BioDigitalPC® Power Control & Monitoring

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

BioDigitalPC® Slot Number	The unique SR-20RM slot number
SR-10 Module Position	The position number of the SR-10 Module within the SR-20RM
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 21 for more information.

Section 4.4 - BioDigitalPC® Power Control & Monitoring

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

Slot Hardware Information

Disable Slot:	Off
Is Auto-Power On Enabled:	On
Delay:	0
MAC Address #1	B4:4B:D6:80:02:88
MAC Address #2	B4:4B:D6:80:02:89
MAC Address #3	B4:4B:D6:80:02:8A

Notes: auto generated content

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 SR-20RM 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-20RM 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 4.5 - SR-20RM System Settings

Click on the cog to access the Systems Settings

The System Settings allows the user to change four things: ROMware password, the machines IP address, the machines Gateway and the ability to enable or disable the Keypad

Section 4.6 - SR-20RM FDD Stack

Add FDD + FDDs ↻ Host FDD: 10.0.1.254

All FDDs

Refresh 'FDD Stack' button

"ADD FDD +" is used to add SR-20RM's together to a stack. This allows you to access all of your SR-20RMs from one interface.

Upon clicking on "Add FDD +" this box will appear. Fill out "FDD IP Adress' and 'FDD Name' and the corresponding SR-20RM will be added to the 'FDD Stack'.
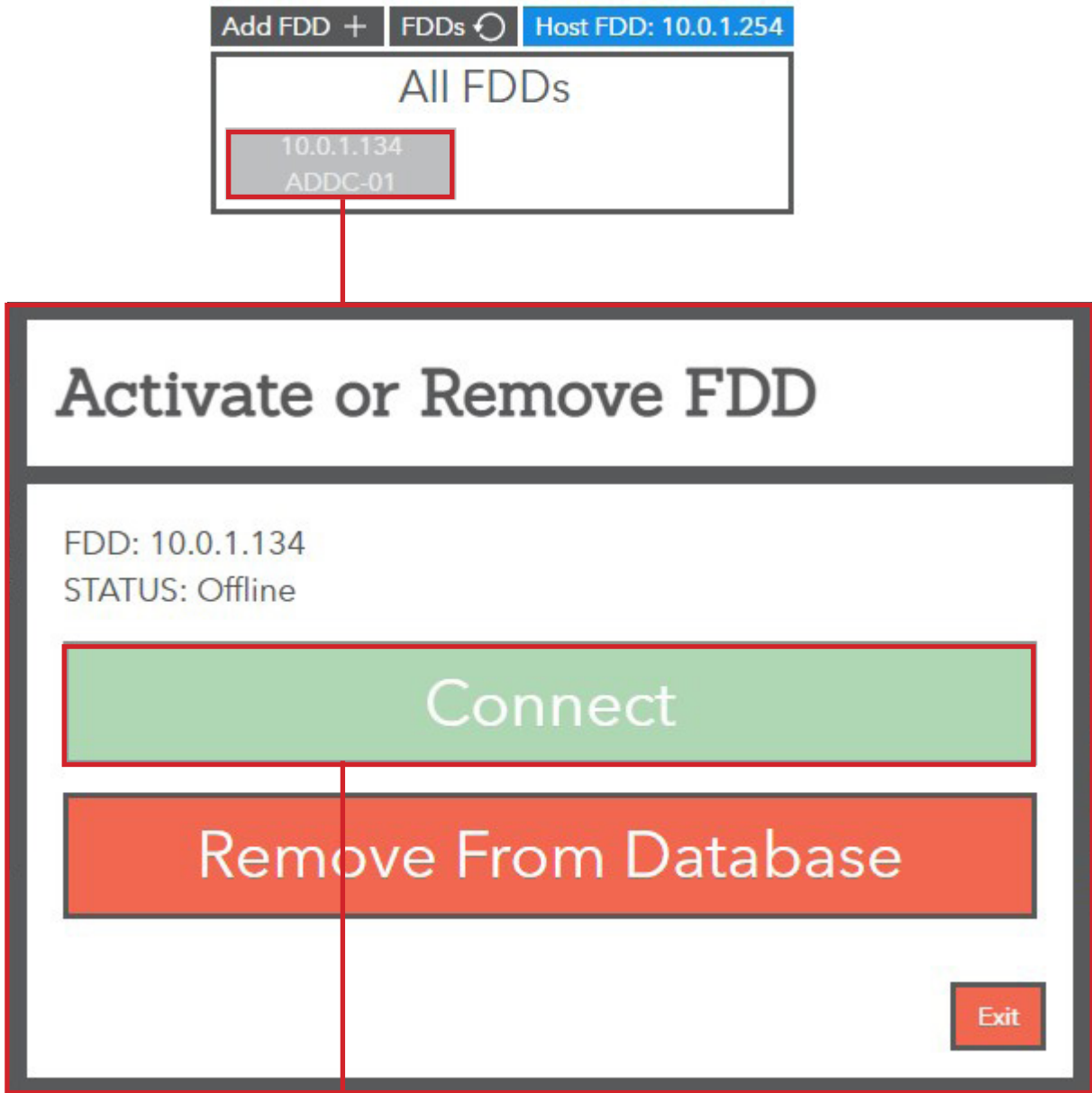
Add FDD

FDD IP Address:

10.0.1.134

FDD Name:

ADDC-01

FDD Serial Number (optional):

Add   NO

Section 4.6 - SR-20RM FDD Stack

Add FDD + FDDs ⟳ Host FDD: 10.0.1.254

All FDDs

10.0.1.134
ADDC-01

Activate or Remove FDD

FDD: 10.0.1.134
STATUS: Offline

Connect

Remove From Database
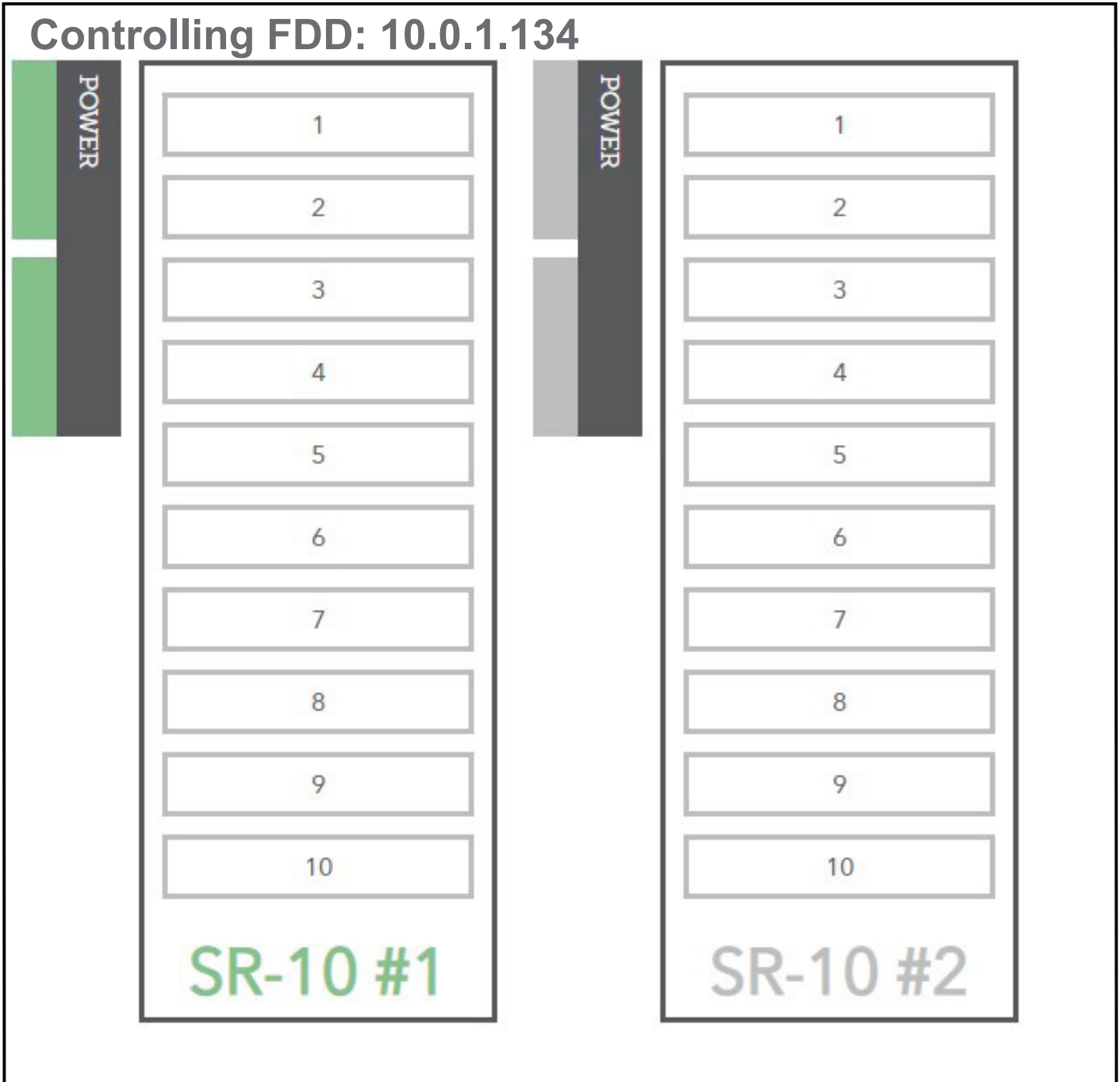
Exit

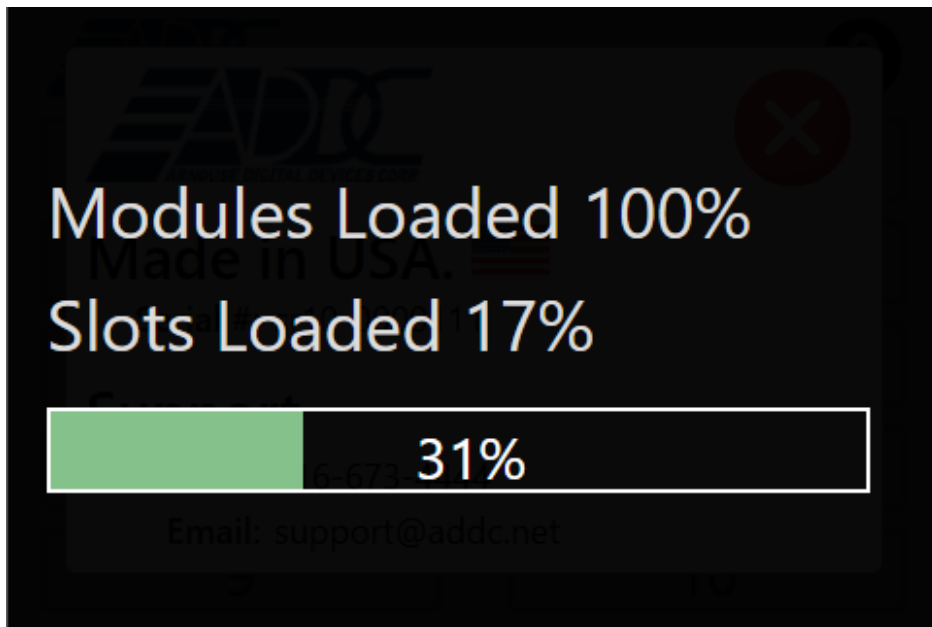The "Connect" button will add the SR-20RM ot the "FDD Stack"

Section 4.6 - SR-20RM FDD Stack

After "Connecting" to the added SR-20RM, your screen will now show the new SR-20RM as the "Controlling FDD"

Controlling FDD: 10.0.1.134

SR-10 #1

SR-10 #2

Section 4.7 - Front Panel Touchscreen Overview

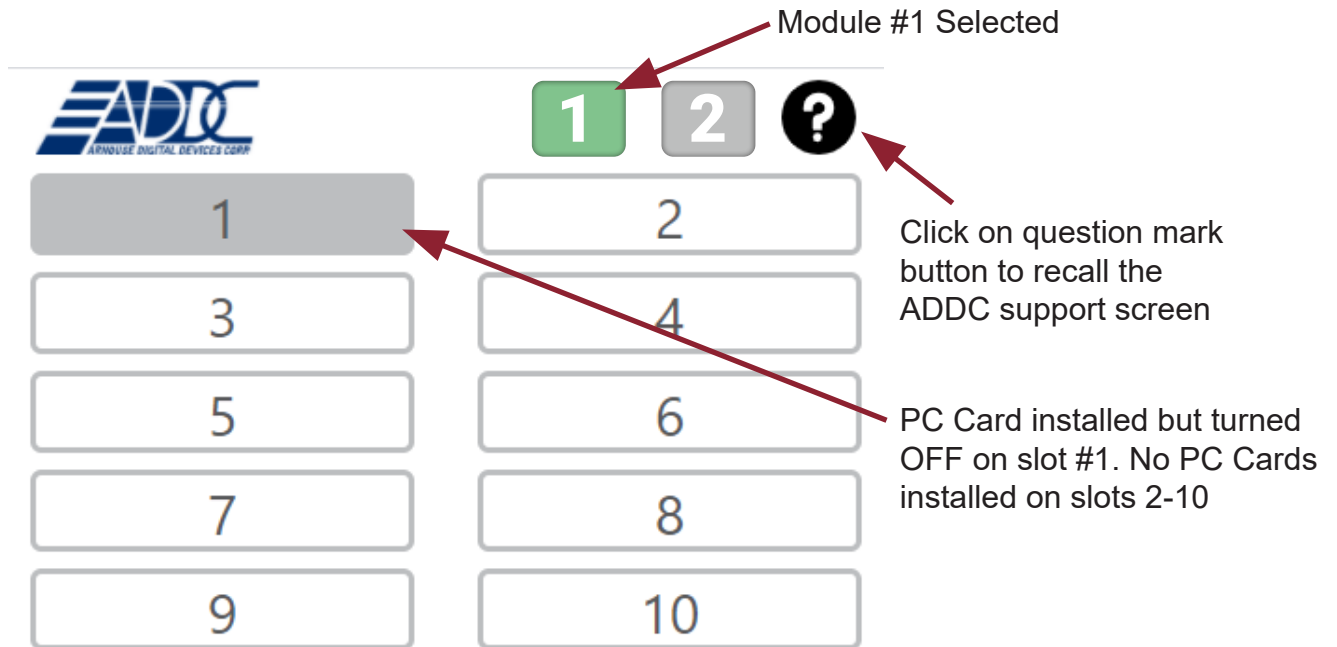- System Startup Screen – Allow 3-4 minutes for system to boot up

- ADDC Support Screen – This screen is displayed right after the system boots up and will be closed after ten seconds or it can also be closed by clicking on the red button.
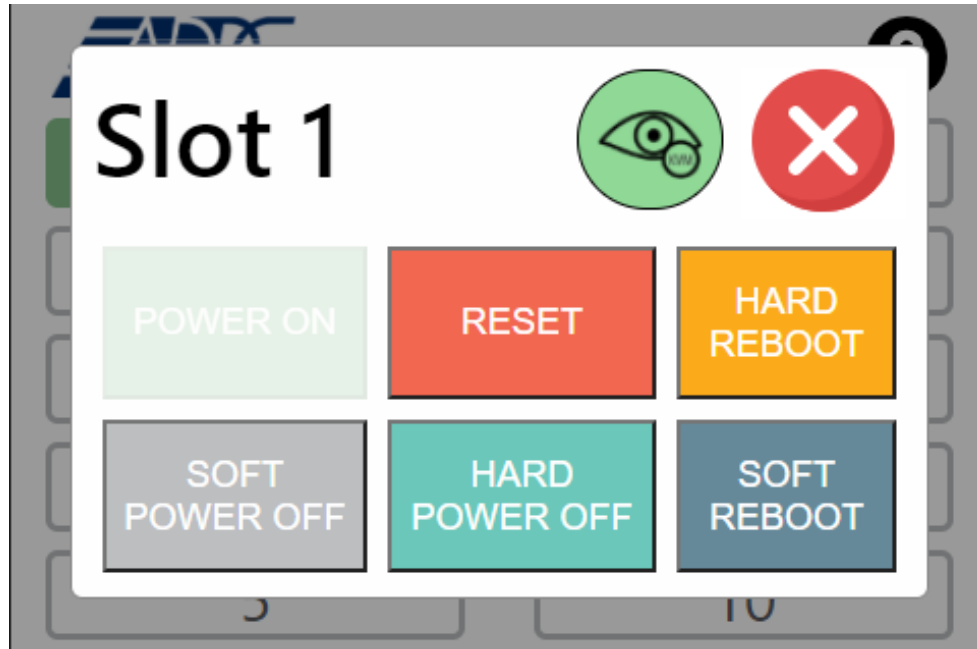
Section 4.7 - Front Panel Touchscreen Overview

- PC Card Slots Power Status Screen – This screen is displayed after the ADDC support screen is closed. WHITE indicates there is no PC Card installed, GRAY indicates there is a PC Card installed but is turned OFF, GREEN indicates that there is a PC Card installed and turned ON.

Module #1 Selected

Click on question mark button to recall the ADDC support screen

PC Card installed but turned OFF on slot #1. No PC Cards installed on slots 2-10

PC Card installed and turned ON on slot #1, no PC Cards installed on slots 2-10. Notice that corresponding NIC LEDs are illuminated indicating that the PC Card's NICs are connected to the switch at 1G speeds. If the LED illuminates in yellow, that is an indication that the NIC is connected at 10/100 speeds.

Section 4.7 - Front Panel Touchscreen Overview

- ADDC Support Screen – This screen is displayed right after the system boots up and will be closed after ten seconds or it can also be closed by clicking on the red button.

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 4.7 - Front Panel Touchscreen Overview

- A lock screen can be activated from the web interface. By default, the lock screen is disabled; however, it can be enabled from ROMWare Lite. When enabled, the lock screen will require you to enter the default pin number 123123 to access the PC Card Slots Power Status Screen. It is recommended that you change the default pin number, it can be changed from ROMWare Lite
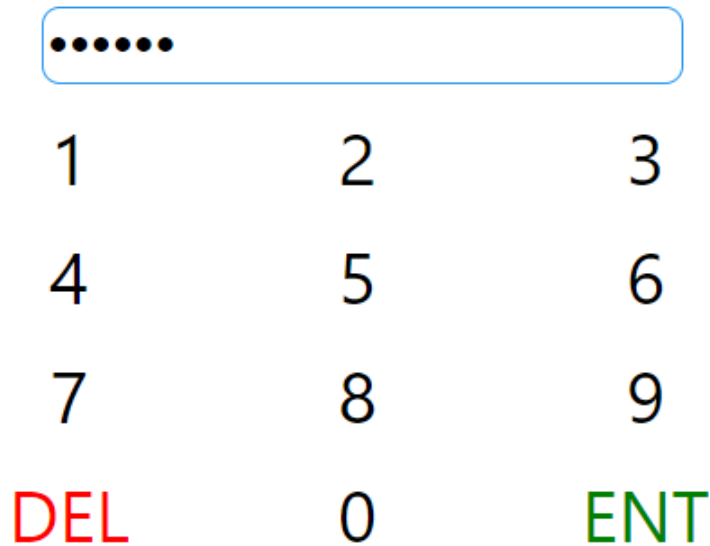
- When the lock screen is enabled, there will be a logout button next to the question mark button; the logout button will lock the screen. There is a default session timeout of six minutes, if there is no user activity in six minutes the session will end, and the screen will be locked. The default session timeout can be changed from ROMWare Lite.

Click the logout button to lock the screen