



SR-20RM USER GUIDE

PLUG INTO THE FUTURE OF TECHNOLOGY



ARNOUSE DIGITAL
DEVICES CORPORATION

Revision History

Revision	Notes
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How to Read this Document

This manual details installation of the chassis, 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 - Receiving 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

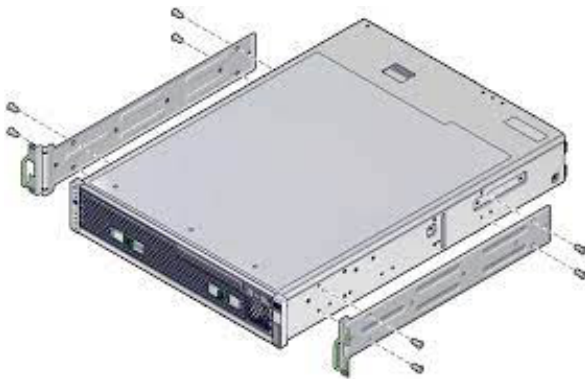
This section provides information on installing the SR-20RM chassis into a rack unit with the quick-release rails provided.

! 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.

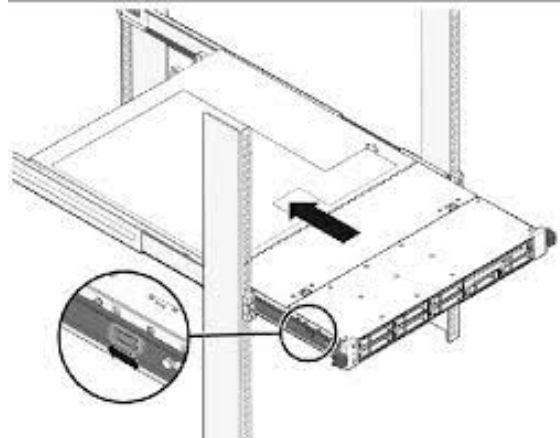
! Inner and outer chassis rails are shipped together, before continuing please separate outer rail from inner rail.

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:

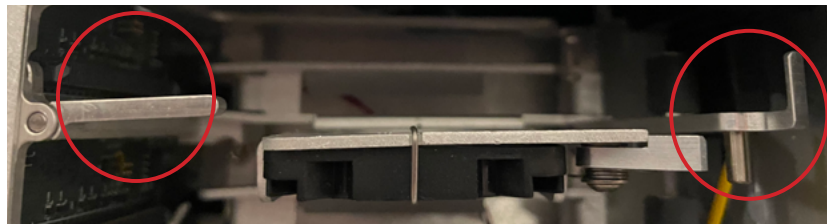
In order to add or remove BioDigitalPC®s the SR-20RM chassis can be pulled out of the rack, or the SR-20RM's Top Cover needs to be removed temporarily.

❗ SR-20RM system can be running while installing new server cards.

Section 2.3.2 - Installing a BioDigitalPC®



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 horizontal 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 ejector bar forward towards you, you should feel the card pop out of the connector.



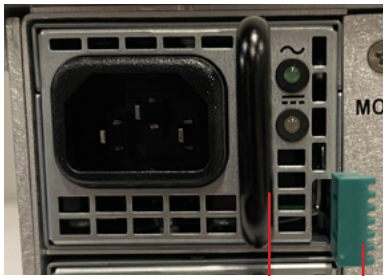
Step 3: Lift to remove the card from its slot

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.

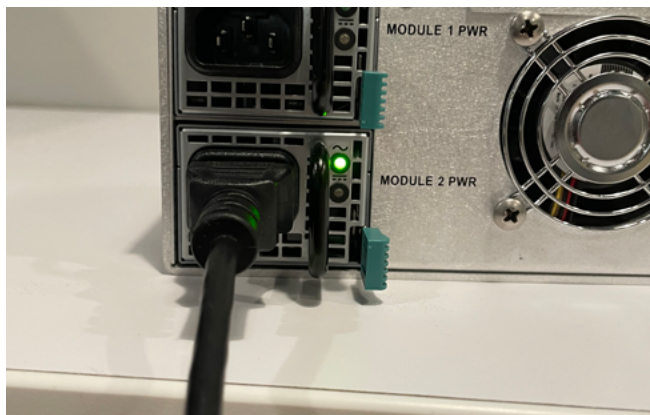
Section 2.4.2 - Install an SR-20RM Power Supply

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)

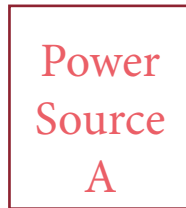
All equipment found in Section 2.5.2, plus the following:

- 4 SFP+ 10Gbps Cables (included)

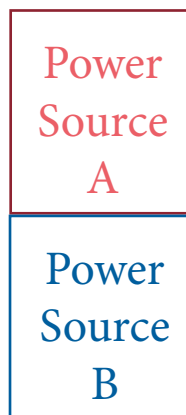


Section 2.6 - Power On Your SR-20RM

Section 2.6.1 - Single Feed Redundant Power Supply Configuration

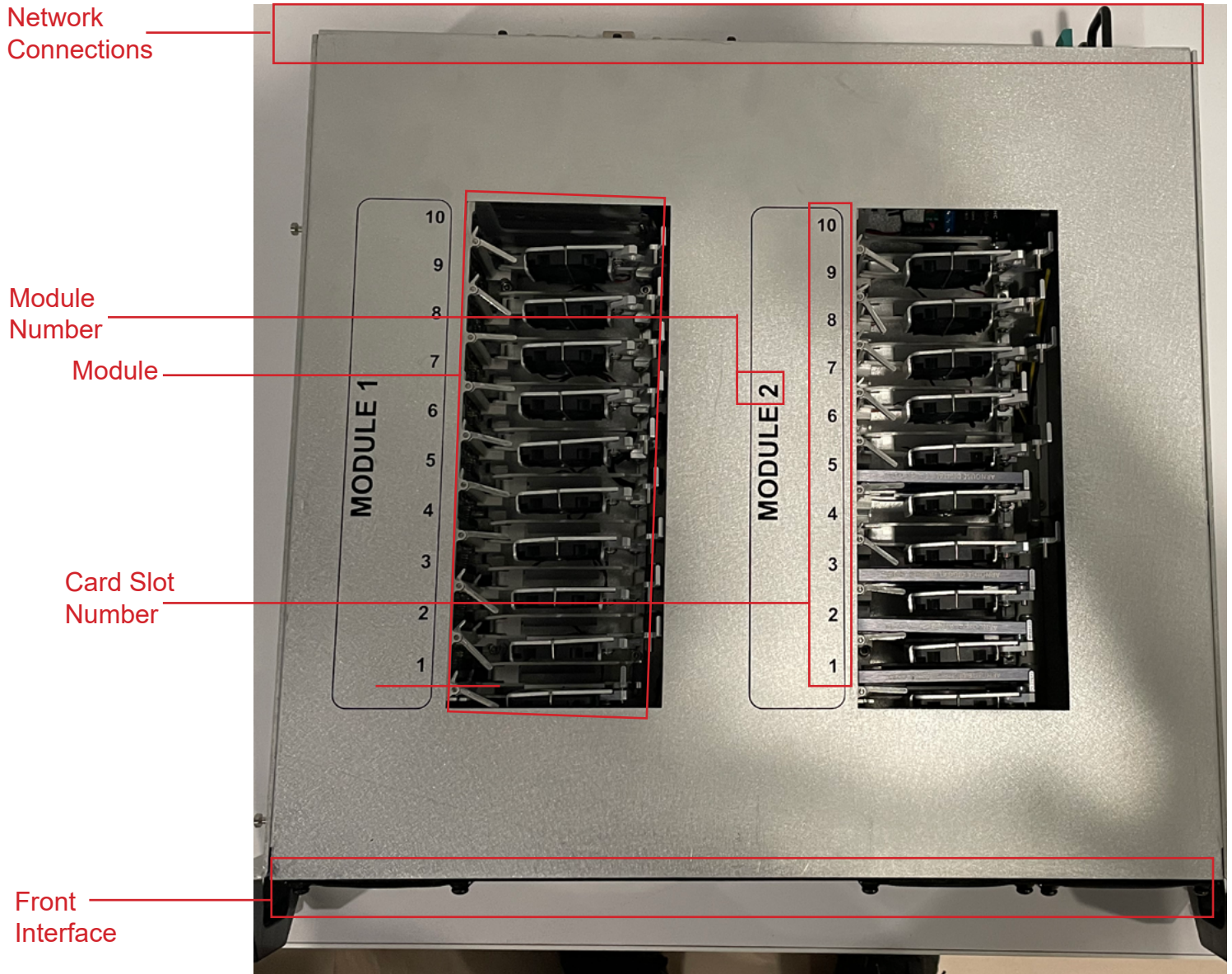


Section 2.6.2 - Dual Feed Redundant Power Supply Configuration



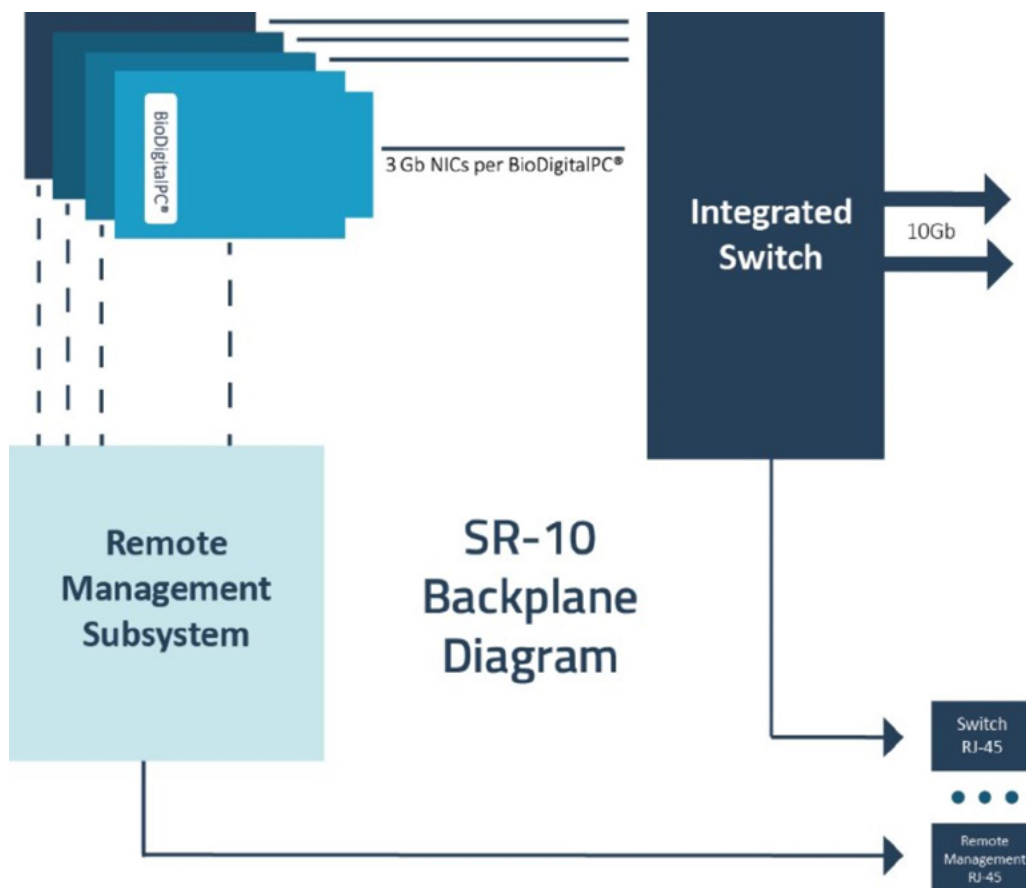
- ❗ Each Power Source must be capable of the maximum draw of 650W.
- ❗ There is no power button.

Section 3 - SR-20RM Overview

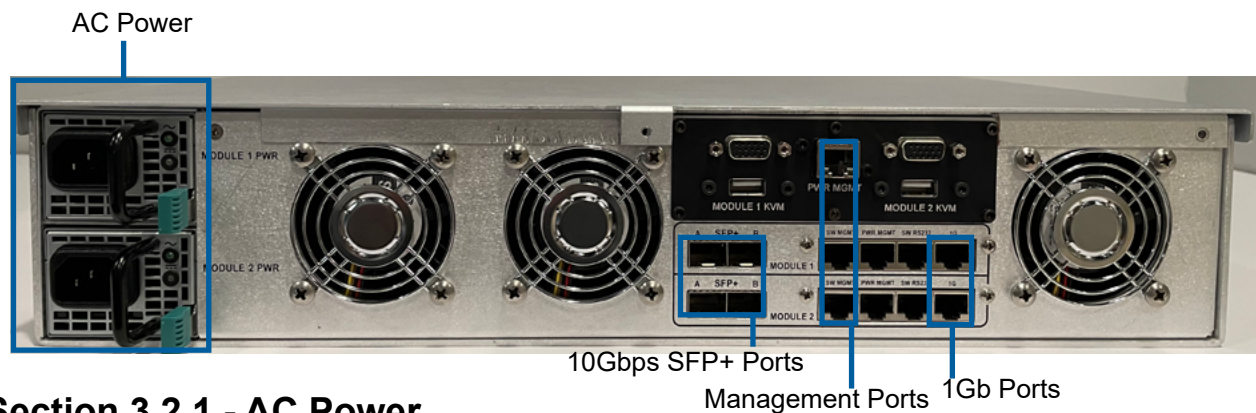


Section 3.1 - SR-10 Modules

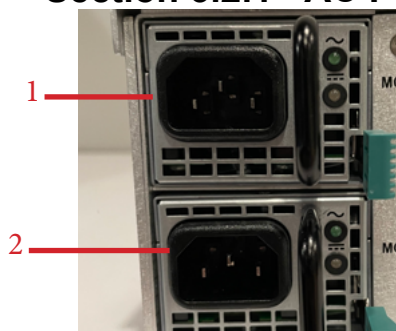
As shown in the [Section 3](#), the SR-20RM is broken up into six SR-10 Modules. Each SR-10 Module contains 10 BioDigitalPC® slots, each having three 1Gbps NICs attached to an integrated switch. Each switch has two SFP+ 10Gbps connectors and one 1Gbps RJ-45 connector broken out to the rear panel of the SR-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).



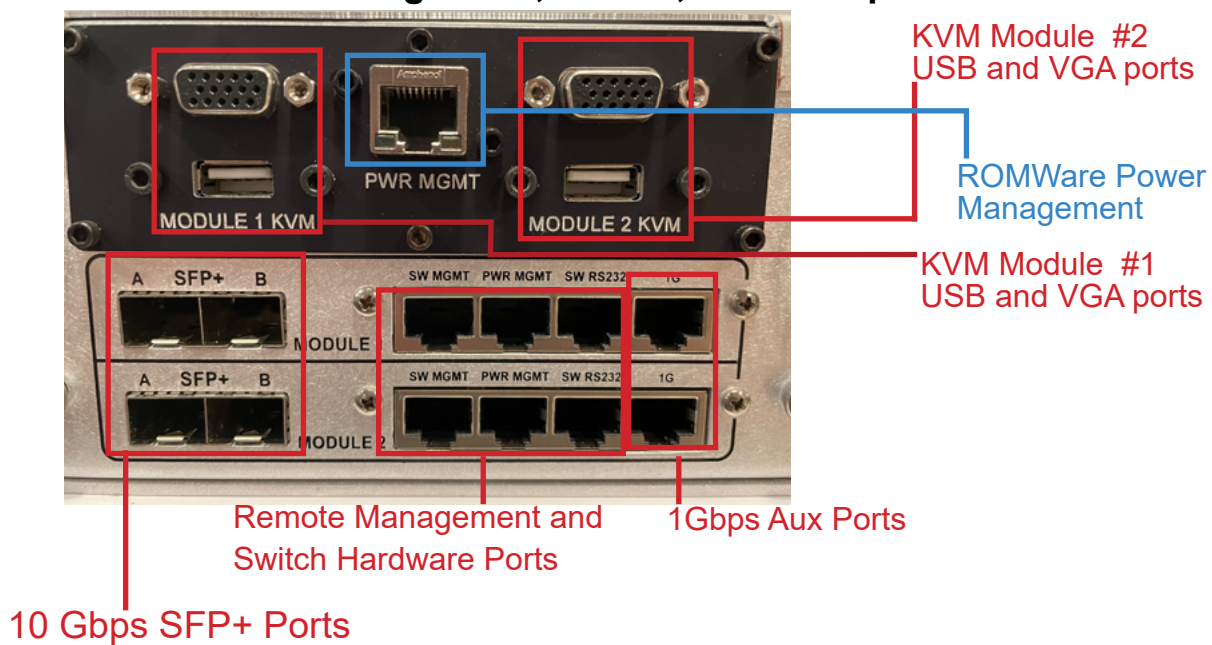
Section 3.2 - Rear Panel



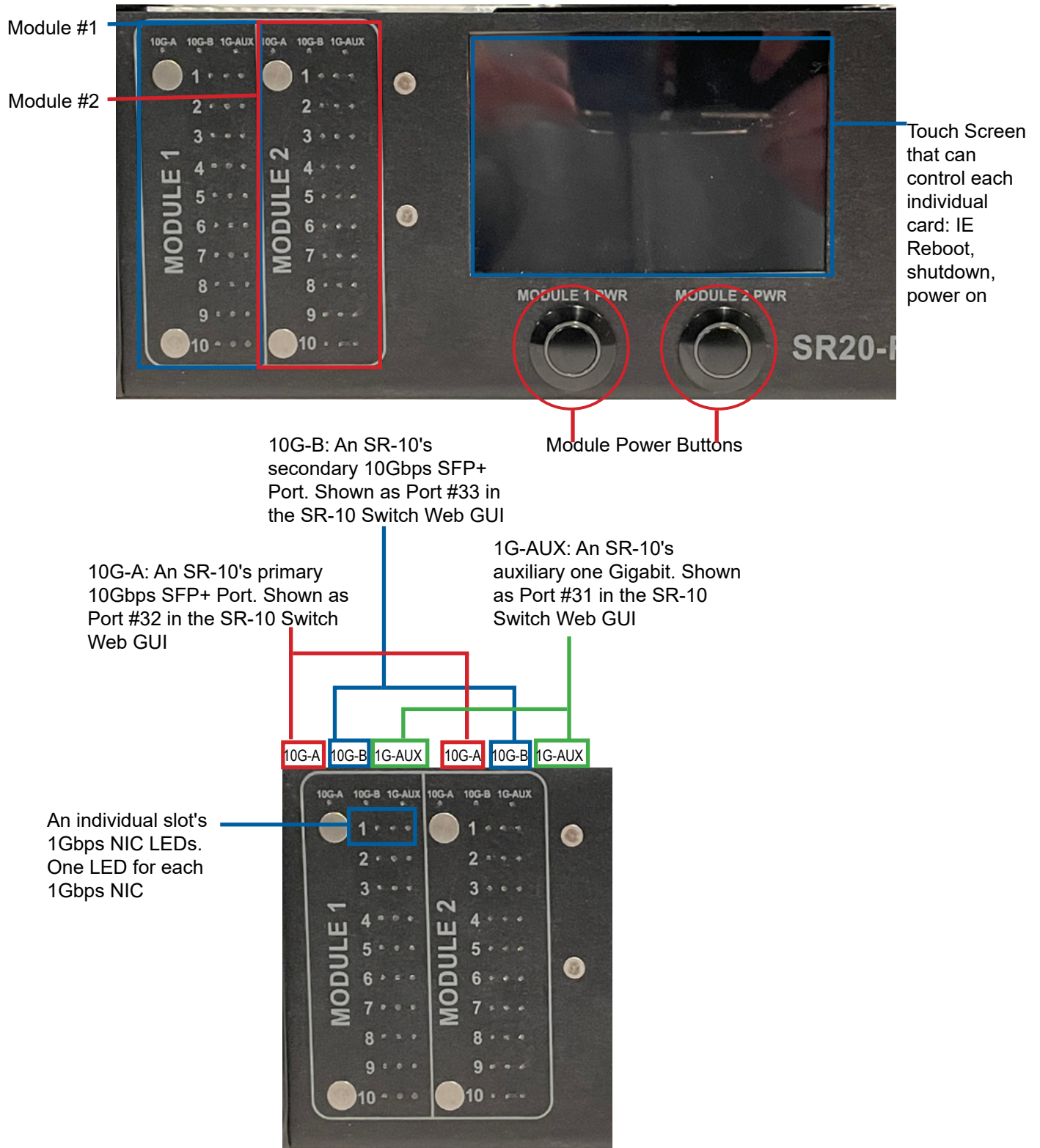
Section 3.2.1 - AC Power



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



Section 3.3 - Front Panel



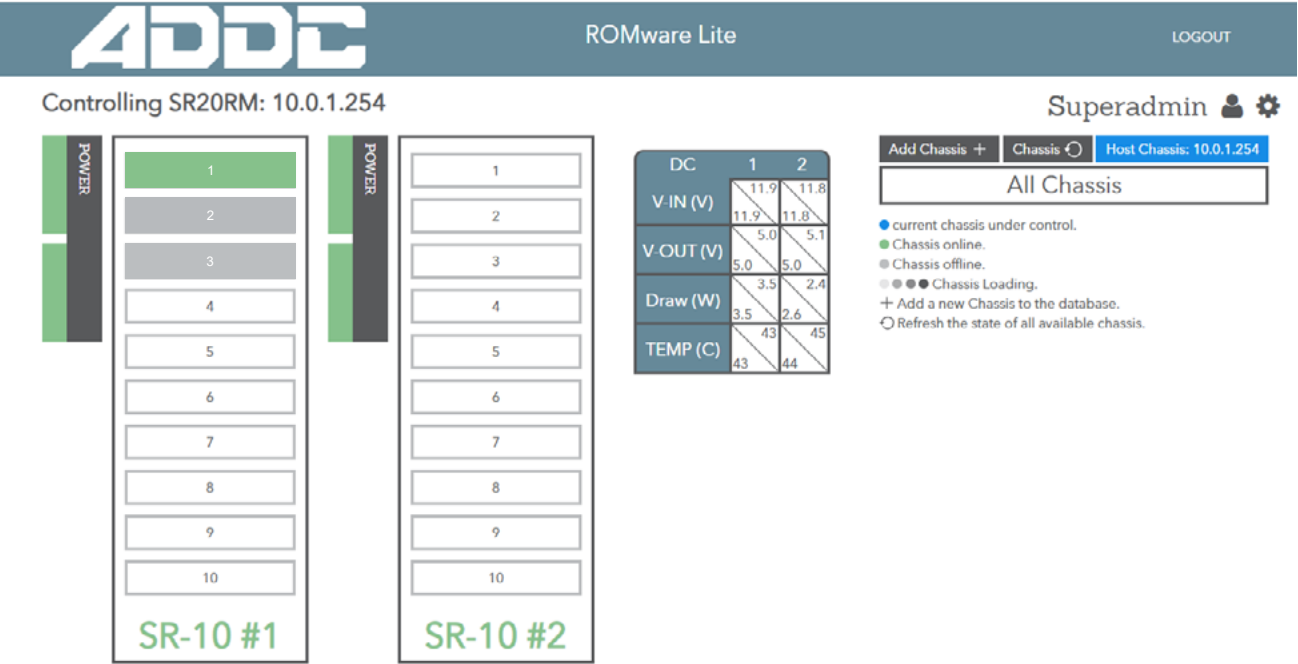
Section 4 - ROMWare Software

Section 4.1 - Login

The image shows a web browser window displaying the login page for the ADDC SR-60 ROMWare software. At the top, there is a dark blue header bar. On the left side of the header is the ADDC logo, which consists of the letters 'ADD' in a stylized font with horizontal lines, followed by 'C' and the text 'ARNDUSE DIGITAL DEVICES CORP.' below it. On the right side of the header, the text 'SR-60' is displayed. Below the header, the main content area is white. It contains two input fields: a 'Username' field and a 'Password' field, both with light blue borders. To the right of the 'Password' field is a dark blue button with the word 'LOGIN' in white capital letters.

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.

Section 4.2 - Main Screen Overview

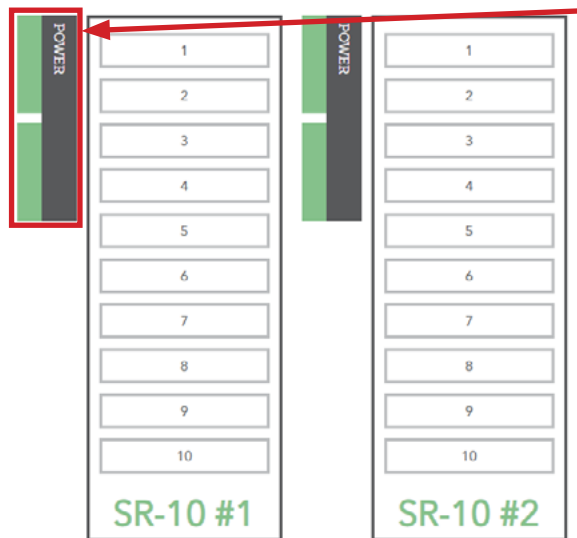


Section 4.3 - AC Power Monitoring

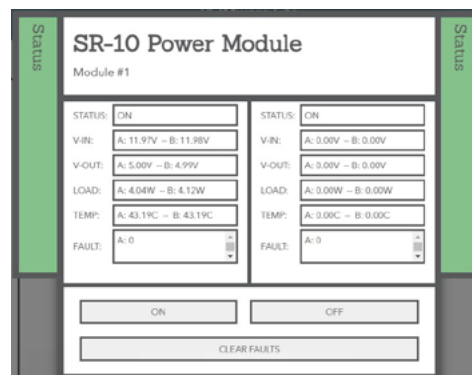
Information about the AC/DC Power Supplies for the two SR-10 modules is shown in this chart:

DC	1	2
V-IN (V)	11.9 11.9	11.8 11.8
V-OUT (V)	5.0 5.0	5.2 5.8
Draw (W)	3.7 3.7	2.4 3.7
TEMP (C)	45 45	50 48

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.

Section 4.5 - BioDigitalPC® Power Control & Monitoring

Displaying the card management features of the SR-20RM is done by clicking the Slot Number.

SR-10 Slot Management

BioDigitalPC® Slot Number	10
SR-10 Module Position	1
BioDigitalPC® Slot Position	1
Current Status	No Card Present
Hardware Information	VIEW
Notes	

SWITCH CONSOLE

POWER ON

SOFT POWER OFF

RESET

HARD POWER OFF

HARD REBOOT

SOFT REBOOT

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

SR-10 Slot Management

BioDigitalPC® Slot Number	10
SR-10 Module Position	1
BioDigitalPC® Slot Position	1
Current Status	No Card Present
Hardware Information	VIEW
Notes	

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 module
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

SR-10 Slot Management

BioDigitalPC® Slot Number

SR-10 Module Position

BioDigitalPC® Slot Position

Current Status

Hardware Information

VIEW

Notes

SWITCH CONSOLE

POWER ON

SOFT POWER OFF

RESET

HARD POWER OFF

HARD REBOOT

SOFT REBOOT

Slot Hardware Information

Disable Slot:

Off

Is Auto-Power On Enabled:

Off

Delay:

MAC Address #1

MAC Address #2

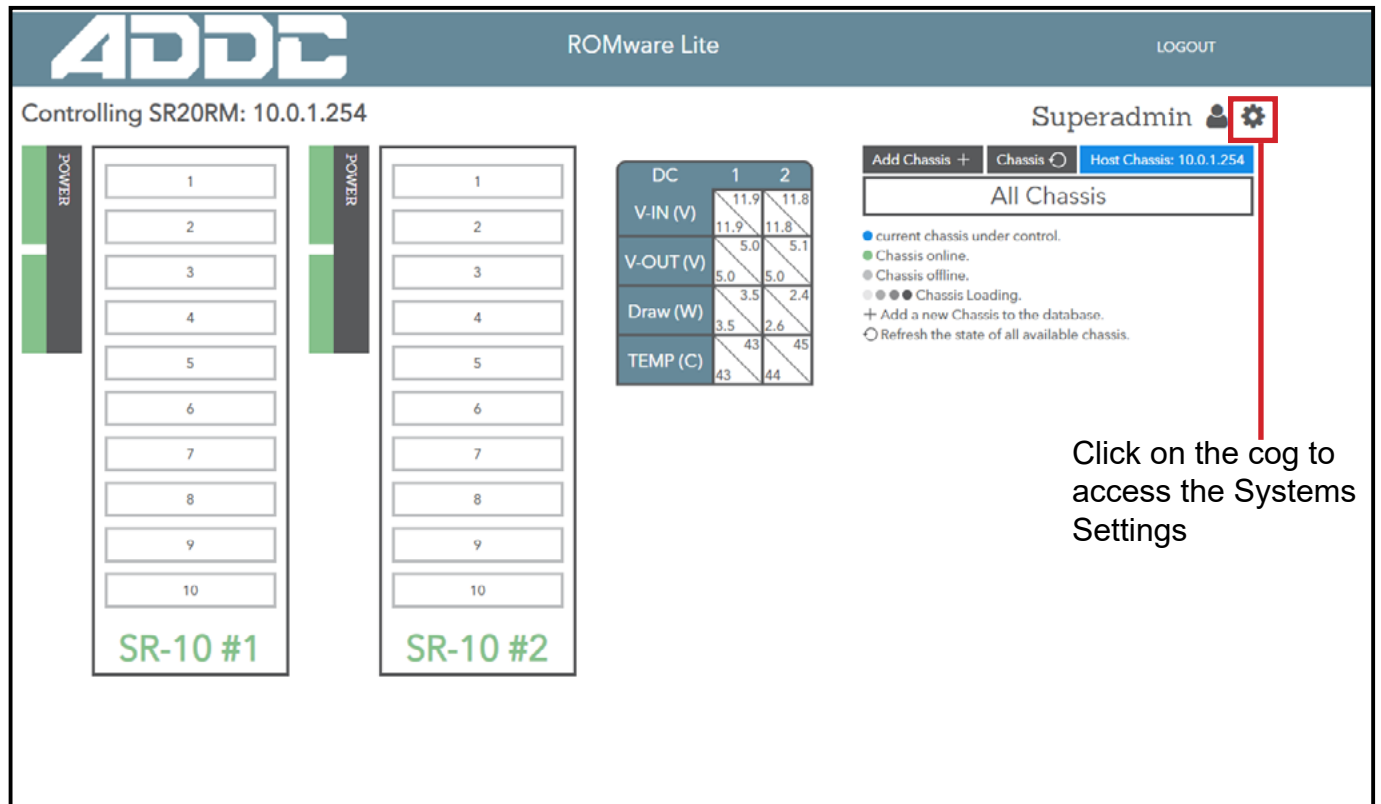
MAC Address #3

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.

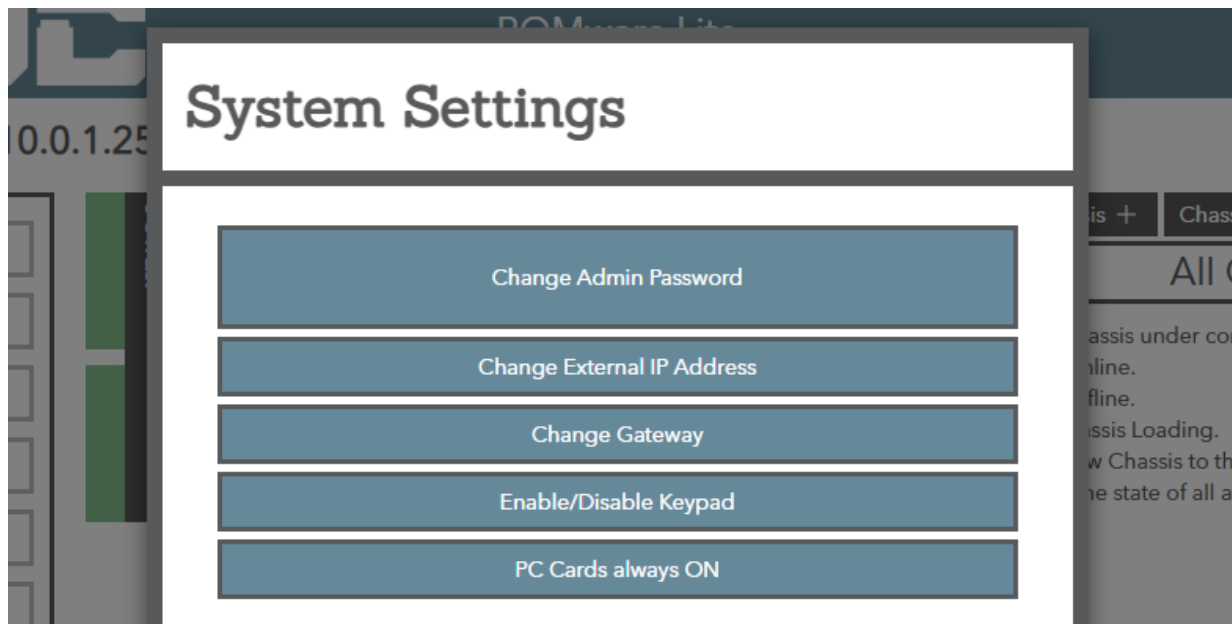
Section 4.6 - SR-20RM System Settings



The screenshot shows the ADDC ROMware Lite interface. At the top, the ADDC logo is on the left, "ROMware Lite" is in the center, and "LOGOUT" is on the right. Below the logo, it says "Controlling SR20RM: 10.0.1.254". On the right, the "Superadmin" user is logged in, with a gear icon for settings highlighted by a red box and a red arrow. Below the user name, there are buttons for "Add Chassis +", "Chassis", and "Host Chassis: 10.0.1.254". A search bar labeled "All Chassis" is below these buttons. To the left of the search bar, there are two vertical columns of buttons labeled "POWER" and "SR-10 #1" and "SR-10 #2". In the center, there is a table of DC power specifications.

DC	1	2
V-IN (V)	11.9	11.8
V-OUT (V)	5.0	5.1
Draw (W)	3.5	2.4
TEMP (C)	43	45

Click on the cog to access the Systems Settings

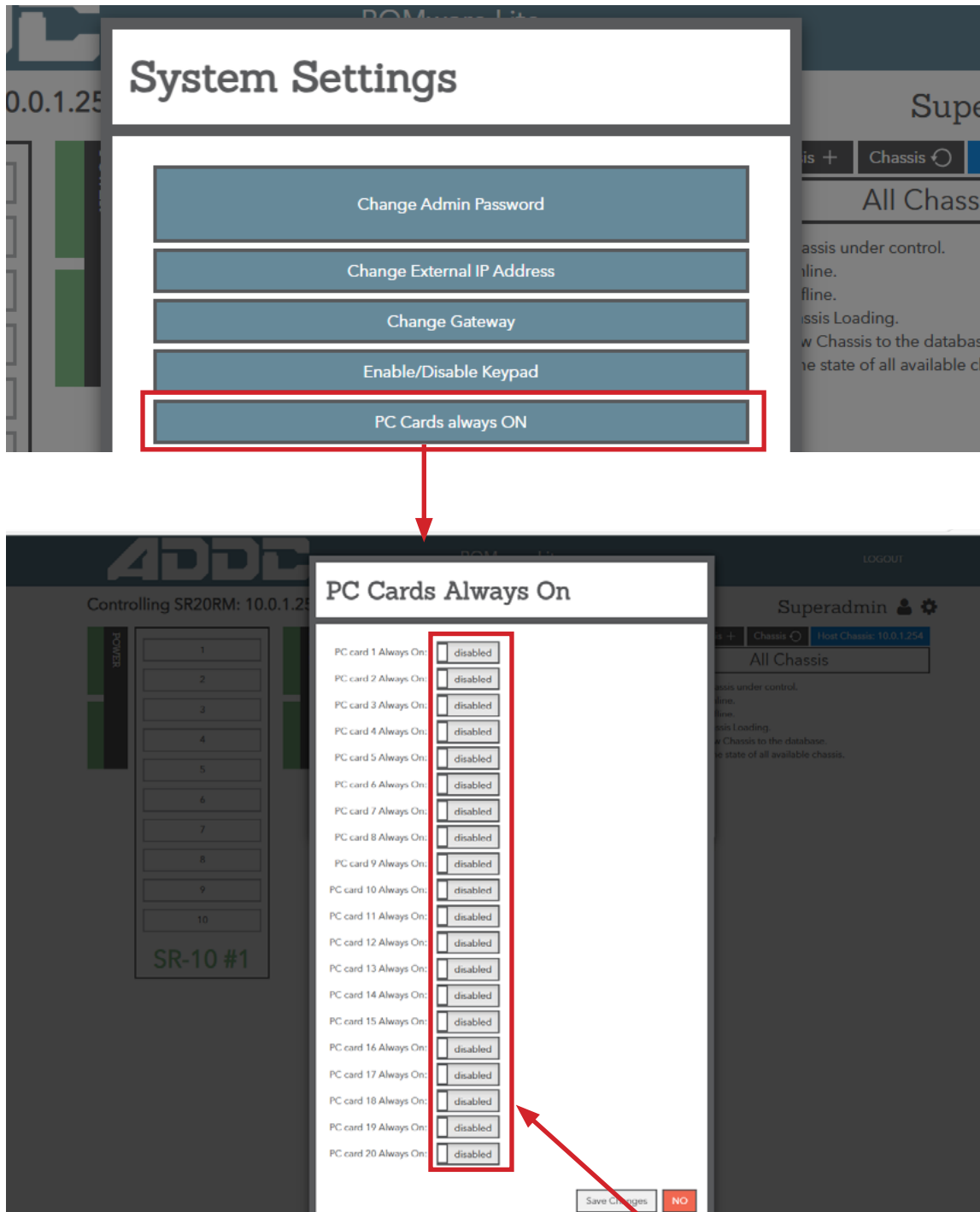


The screenshot shows the "System Settings" menu. The title "System Settings" is at the top. Below it, there are five buttons: "Change Admin Password", "Change External IP Address", "Change Gateway", "Enable/Disable Keypad", and "PC Cards always ON".

The System Settings allows the user to change four things: ROMware password, the machines IP address, the machines Gateway, the ability to enable or disable the Keypad, and the option to keep PC Cards always ON.

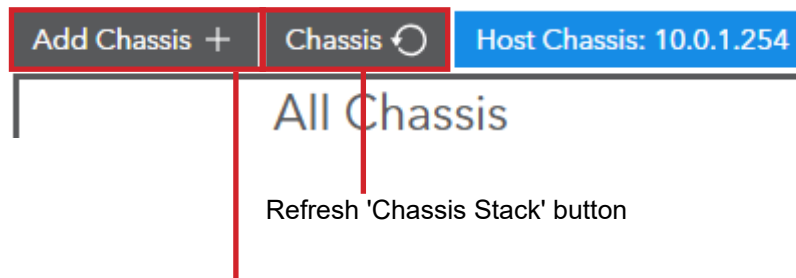
Section 4.6.1 - SR-20RM System Settings - PC Cards Always ON

By default all the BioDigitalPC® connected to the SR-20RM will always stay on even after they'd been shutdown they will auto reboot. To change this behavior follow the instructions below:



Every individual BioDigitalPC® has an enable/disable "PC card always On" switch.

Section 4.7 - Control Remote SR-20RM Chassis Stack



"ADD Chassis +" is used to add SR-20RM's/ SR-10RM's together to a stack. This allows you to access all of your SR-20RM's/SR-10RM's from one interface.

Upon clicking on "Add Chassis +" this box will appear. Fill out "SR-20RM IP Address" and "SR-20RM Name" and the corresponding SR-20RM will be added to the 'SR-10RM Stack'.

Add Remote Chassis

Chassis IP Address:

Chassis Name:

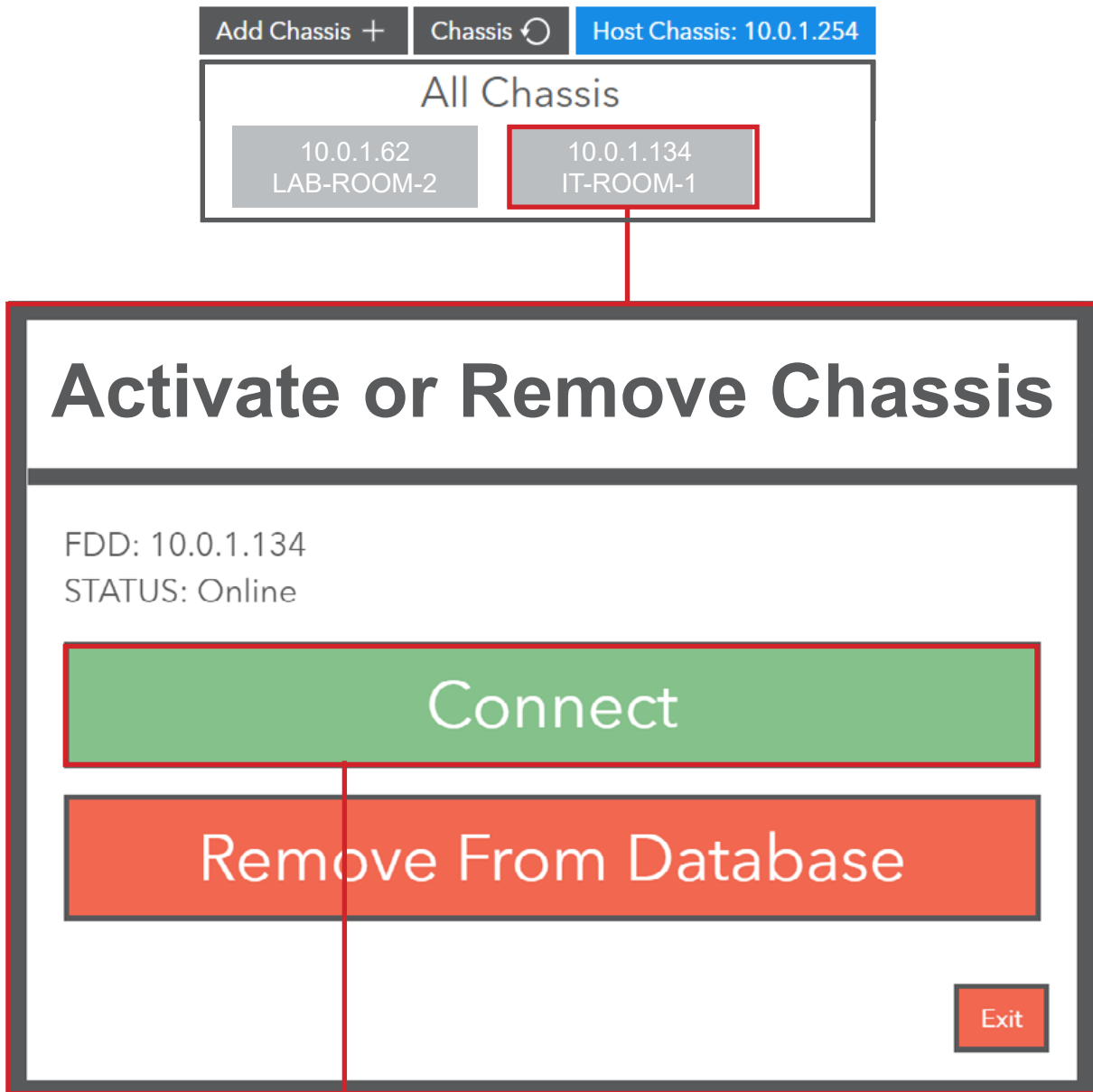
Chassis Type:

Select a Chassis Type ▼

Chassis Serial Number (optional):

Add NO

Section 4.7 - Control Remote SR-20RM Chassis Stack



The "Connect" button will add the SR-20RM to the "Chassis Stack"

Section 4.7 - Control Remote SR-20RM Chassis Stack

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

Controlling Chassis: The node with blue background is the currently controlled SR-20RM Chassis

The screenshot displays the ADDC ROMware Lite interface. At the top, the header shows 'ADDCC' and 'ROMware Lite'. Below the header, the status 'Controlling SR20RM: 10.0.1.134' is visible. The main area features two vertical stacks of chassis, labeled 'SR-10 #1' and 'SR-10 #2', each with 10 slots. To the right, a 'DC' table provides real-time data for two chassis. Further right, an 'All Chassis' list shows two entries: '10.0.1.62 LAB-ROOM-2' and '10.0.1.134 IT-ROOM-1'. The latter is highlighted with a blue background, indicating it is the current chassis under control. A legend at the bottom right explains the status icons: a blue dot for 'current chassis under control', a green dot for 'Chassis online', and a grey dot for 'Chassis offline'. It also includes instructions for adding new chassis and refreshing the state.

DC	1	2
V-IN (V)	11.9	11.8
V-OUT (V)	5.0	5.1
Draw (W)	3.5	2.4
TEMP (C)	43	45

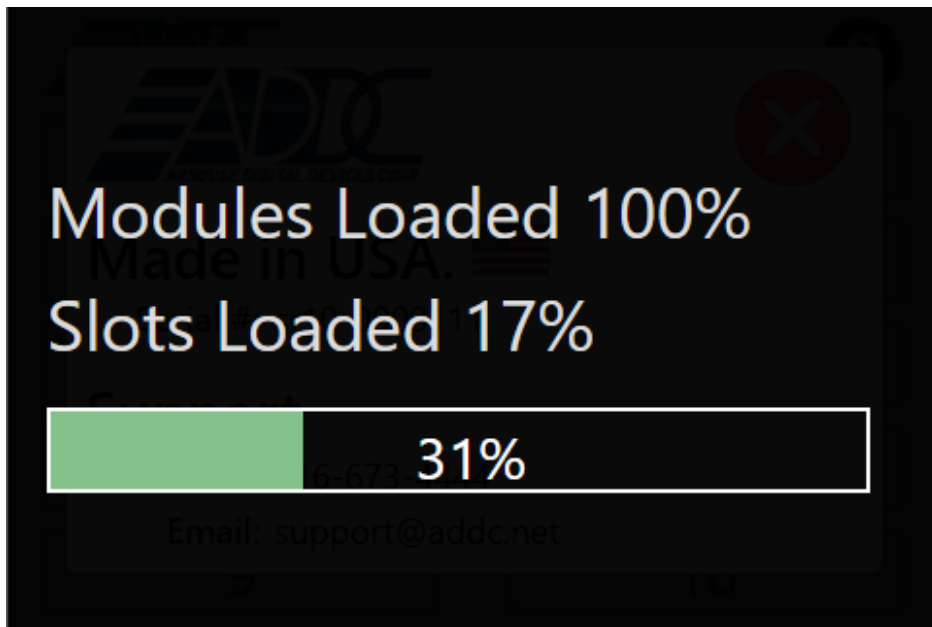
All Chassis

- 10.0.1.62 LAB-ROOM-2
- 10.0.1.134 IT-ROOM-1

● current chassis under control.
● Chassis online.
● Chassis offline.
●●● Chassis Loading.
+ Add a new Chassis to the database.
○ Refresh the state of all available chassis.

Section 4.8 - Front Panel Touchscreen Overview

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

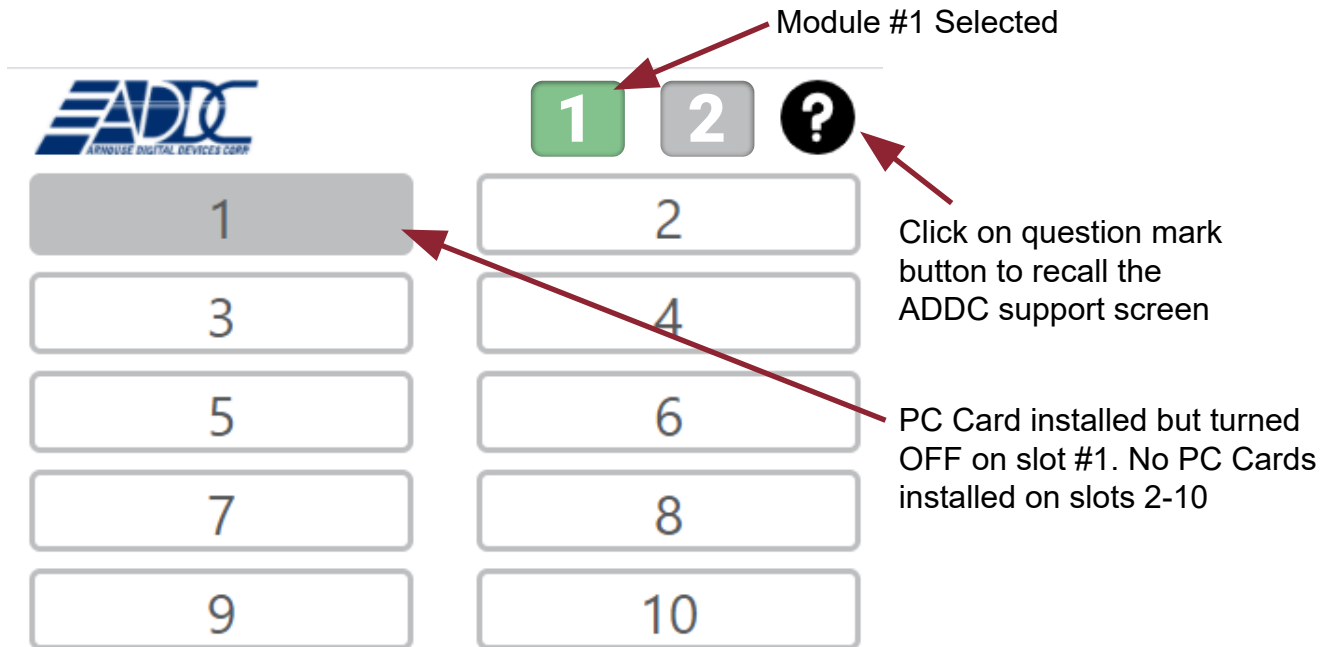


- ADDC Support Screen – This screen is displayed right after the system boots up and will be closed after ten seconds or it can also be closed by clicking on the red button.



Section 4.8 - Front Panel Touchscreen Overview

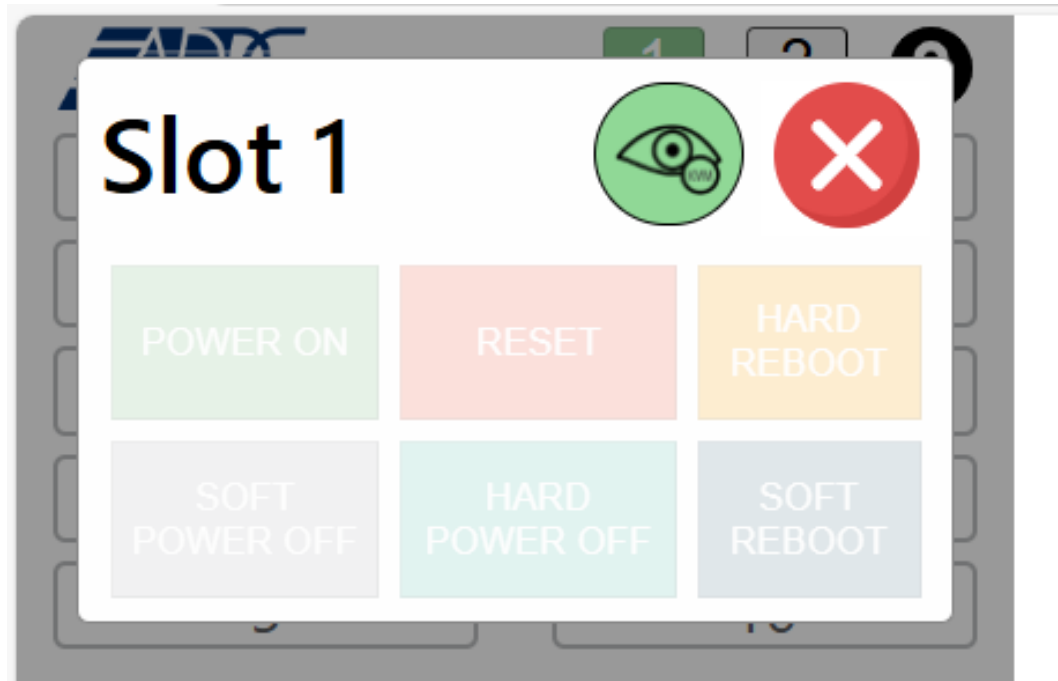
- PC Card Slots Power Status Screen – This screen is displayed after the ADDC support screen is closed. WHITE indicates there is no PC Card installed, GRAY indicates there is a PC Card installed but is turned OFF, GREEN indicates that there is a PC Card installed and turned ON.



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 4.8 - 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

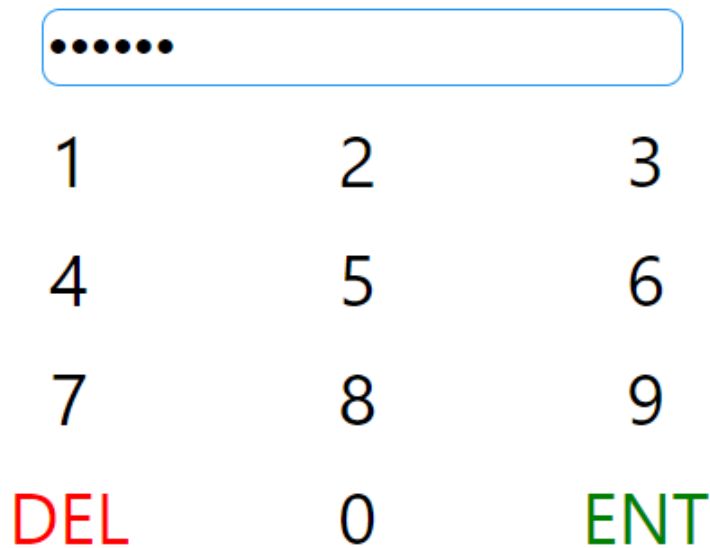
Removes power from the remote power control. Do not use this unless specifically instructed to.

SOFT REBOOT

Gracefully reboots the BioDigitalPC[®] Server card.

Section 4.8 - 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.

