ALTUS

charge it.
then
deploy it.

clio
med

Operating
Manual

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⚠

Drawer System Use: Cart needs to be powered "on" to use the touchscreen and to access the drawers. Once the cart is powered on, the software will load (10 seconds) and then will be ready to use. **To login, enter the pin code of 10597. This is a Factory Set Admin User Code. It is highly recommended to assign a new Admin passcode and disable the factory set Admin passcode.**

MPM Software Installation: To maximize product effectiveness, installation of the MPM Software is highly suggested.

Make sure your cart workstation USB port is connected to the USB port on the MPM Power unit/controller installed in your cart. Download the Powervar MPM View install package, and save it to the workstation desktop (or other convenient location).

To download the latest software go to: www.altus-inc.com/downloads.
Select "Install MPMView (Windows XP/Windows 7)" to download.

Summary of Warnings

⚠️ Please read all parts of this guide. When set-up is complete, do not discard guide. Please file guide in secure place for future reference.

⚡ Appropriate airflow is required for this unit to operate correctly under normal and fault conditions.

⚡ Complies with requirements for US for outside the patient environment.

⚡ Only authorized personnel, experienced in servicing electrical equipment should open the power system.

⚡ DO NOT operate the power system without the covers completely installed and the connectors attached properly. The covers provide safety from potentially dangerous voltages.

⚡ Do not connect or disconnect the system while power is applied. Do not open or in any other manner change the access to the internal portion of the system while power is applied.

⚡ Do not allow the system to come in contact with fluids. Do not operate the system if wet.

⚡ The supplied spiral cord is rated for medical use. Connecting the cord to an outlet that is not medical grade (indicated with green dot) will not ensure grounding protection

⚡ Sipral cord, power system and cart are for INDOOR use only. DO NOT OPERATE OUTDOORS.

⚡ Inspect spiral cord before each use. DO NOT USE CORD IF DAMAGED.

⚡ DO NOT plug more than the specified number of watts into spiral card cord.

⚡ DO NOT run spiral cord through doorways or across walls or floors.

⚡ Fully insert certified detachable spiral cord plug into outlet. DO NOT unplug by pulling on cord. For 250VA models, a type not lighter than SJT 18AWG should be used.

⚡ DO NOT remove, bend or modify any metal prongs or pins of spiral card cord.

⚡ DO NOT use excessive force to make connections.

⚡ Keep spiral cord away from water. DO NOT PLUG CORD INTO OUTLET IF WET.

⚡ Keep children away from spiral cord.

⚡ DO NOT ALLOW CORD TO OVERHEAT.

⚡ DO NOT drive, drag or place objects over spiral cord. Do not stand or walk on spiral cord.

⚡ Breaking the seal on the battery to add water will damage the battery and could cause injury.

⚡ Battery warranty is automatically void when a fully discharged battery is left in an unused state for more than three (3) consecutive days.

⚡ The power system is designed for power cart mounted equipment only. DO NOT connect equipment that is not mounted on the cart into the power system outlets. DO NOT connect cart mounted equipment directly into a power source that is not mounted to the cart. DO NOT disassemble the MPM

♻️ Sealed Lead Acid Battery must be recycled.

Lithium Iron Phosphate (LiFe) Battery Disposal
Battery recycling is encouraged. Dispose of in accordance with local, state and federal laws and regulations.

Transportation/Storage
Store this system within a temperature range of 32˚ F - 90˚ F (0˚ C - 32˚ C); Pressure 500 hPa to 1060 hPa; Humidity 20% RH to 95% RH non-condensing.

Cart Disposal
To dispose of this cart using the local guidelines and regulations for waste. Please contact Altus Customer Service for information: 1.888.527.1311

Product Introduction

NOTE: Cart needs to be powered "on" to use the touchscreen and to access the drawers.

Once the cart is powered on, the software will load (10 seconds) and then be ready to be used.

To login, enter the pin code of 10597.

Standard Features:

1. Height Adjustment Column
2. Highly Mobile 4"/100mm Single-Wheel Shrouded Casters
3. Handle
4. Large Thermofoil Worksurface Area
5. Keyboard Platform
6. Mousing Area
7. 6 Side Accessible Med Drawers
8. 6 Removable Bins with Dividers
9. LCD Monitor Support
10. Touchscreen
11. RUI
12. Power System & Battery Compartment
13. Internal Technology & Cable Management
14. Locking Technology Storage
15. 3-Outlet Power Cord (not shown)
16. Coiled Power Cord Holder
17. Battery Access Panel (back)
18. Up/Down Button Switch
19. RFID Badge Reader Access (Optional Accessory)

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Keyboard Platform
Adjustment Instructions

1 The keyboard platform is tilted and stored at 90 degrees for shipping purposes only (See Fig. A).

2 To use:

Place both hands on each side of the keyboard platform and simply tilt to desired position and slide-out for use (See Fig. B).

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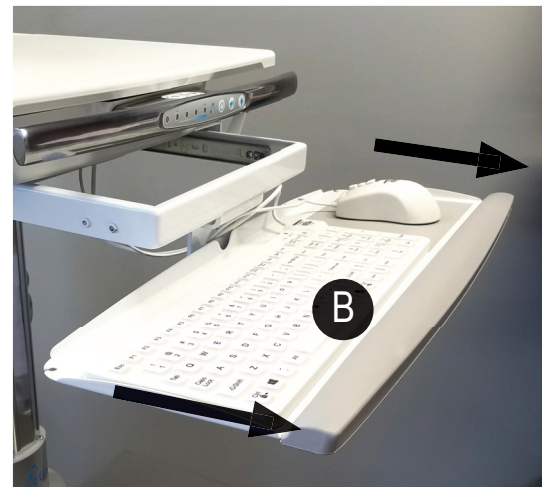
Wired Keyboard and Mousing Routing Installation Instructions

1 Keyboard and Mouse Wire Management
The keyboard platform and mouse tray are equipped with wire managers to keep wires in place (See Fig. A)

A
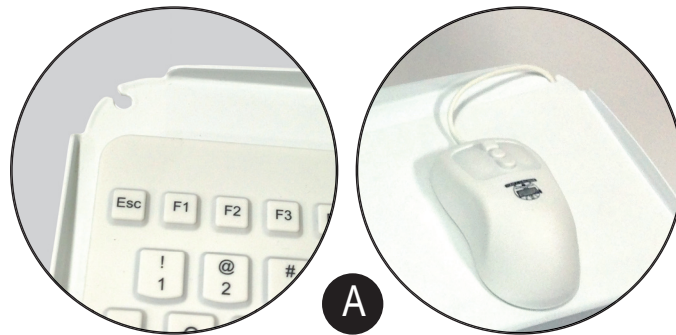
2 Keyboard and Mouse Wire Management to inside of technology storage area
Feed both keyboard and mouse wires through top of access holes, located under the handle (See Fig. B).
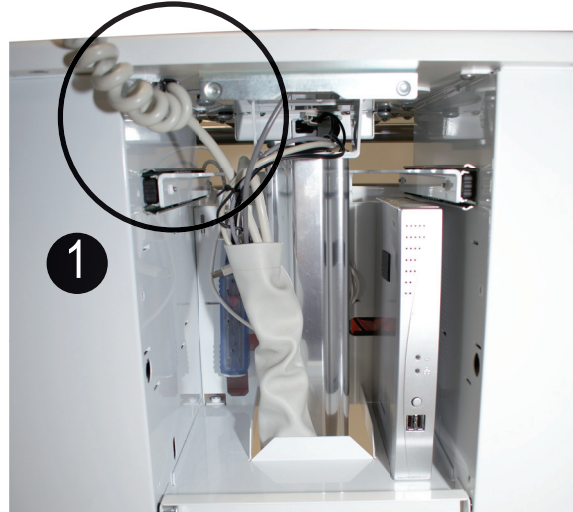

B

Accessing the Coiled Power Cord

1 Unlock back door (with provided key) of technology storage area.

Pull Coiled Power Cord from inside technology storage area.

2 Manage the straight part of cord into cutout of door. Close door and lock with key.

3 Place plug end onto cord hook.

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ClioMed Worksurface and LCD Monitor Support

Flat Screen Monitor Support

1 Open technology storage area to access mounting holes from underneath worksurface.

2 Place Flat Screen Monitor Support through the (2) holes in the work surface assembly.

3 Attach (2) 5/16-18" Flange Hex Nuts to bolts underneath the work surface assembly.

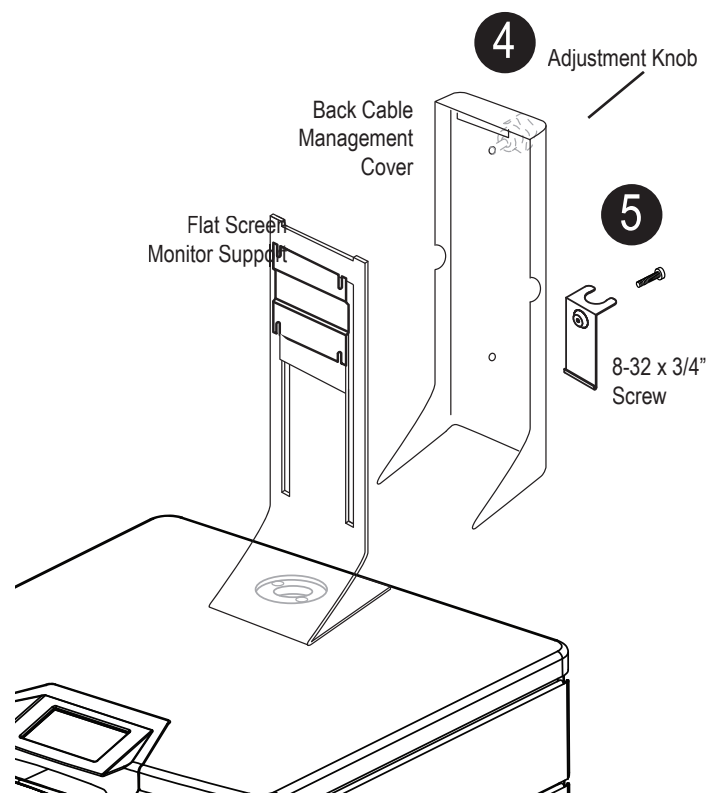Tighten with 1/2" Socket Wrench (preferred).
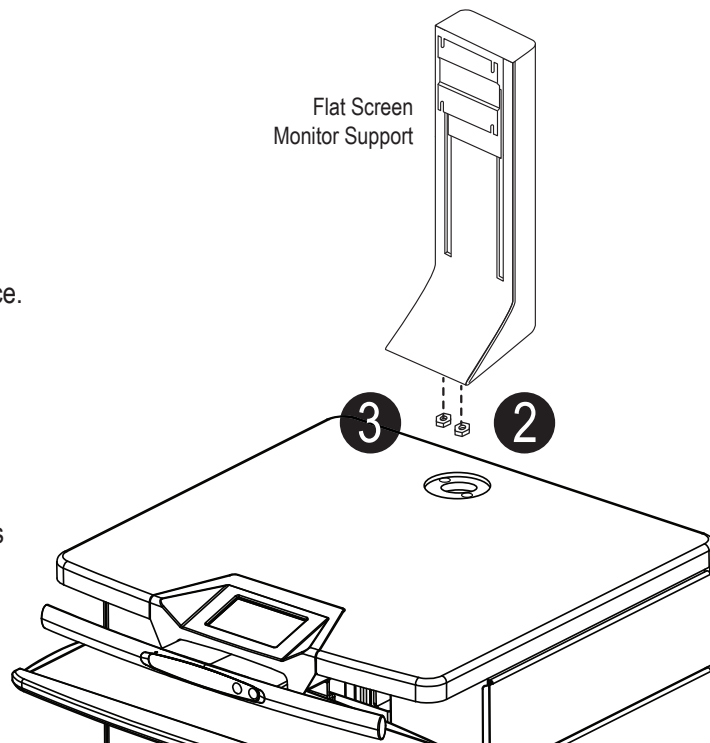
Cable Hook and Internal Cable Management

5 To manage cables within the Flat Screen Monitor Support, remove back cable management cover.

To remove back cable management cover, remove 8-32 x 3/4" screw. Do not discard.

To Install Cable Hook, slide the bottom lip of cable hook onto bottom of Cable Management Cover. Insert and tighten the #8-32 x 3/4" Screw.

4 Adjustment Knob

Back Cable Management Cover

Flat Screen Monitor Support

5

8-32 x 3/4" Screw

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ClioMed Worksurface and LCD Monitor Support

6 Attach Monitor to VESA Plate using the included (4) Phillips Drive Flat Head Machine Screws.

Choose length of screw by the depth of mounting location on back of monitor. If too long of screw is used, damage to monitor may occur.

VESA Plate
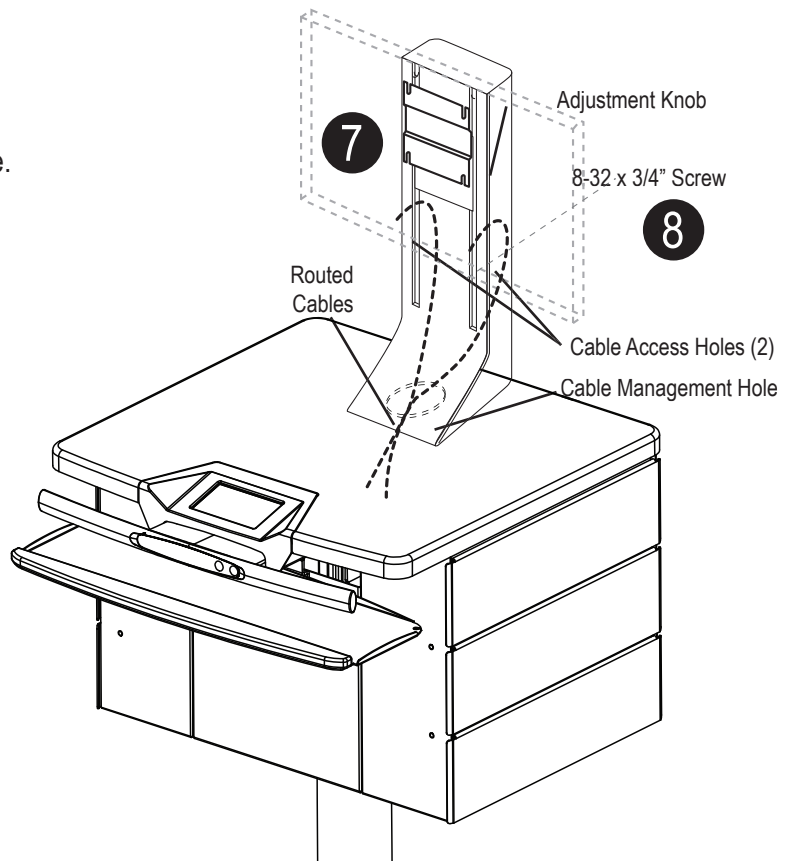
6

8-32 x 3/4" Screw
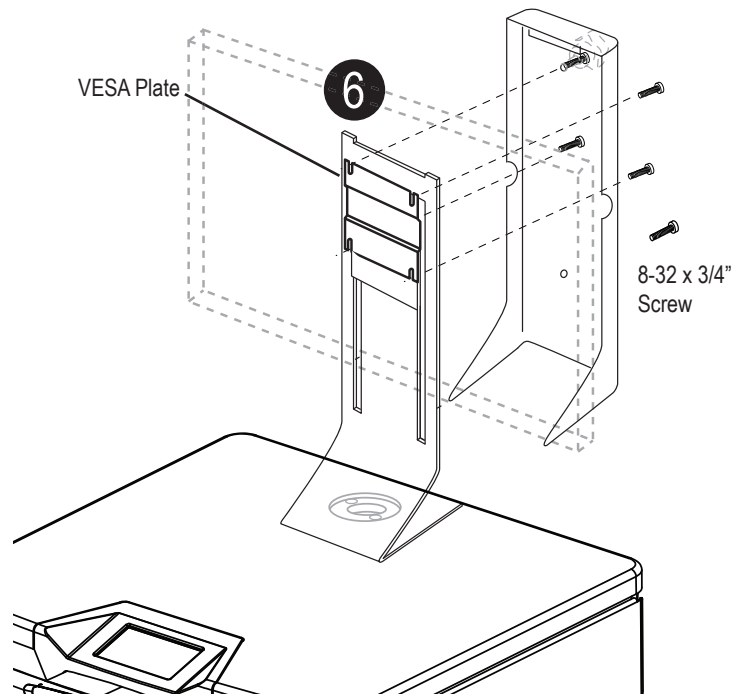
Managing monitor cables:

7 Once monitor is attached. Adjust monitor to its highest position. Manage cables from monitor down and through cable management hole.

8 Reinstall back cover (Make sure to route the cables through the side access holes in cable management cover). Align screw hole in cover with screw boss. Use 8-32 x 3/4" Long Pan Head Machine Screw to fasten cover and Reinstall Adjustment Knob.

NOTE:

9 For monitor height adjustment, make sure the adjustment knob is slightly loosened (Do not loosen all the way).

For monitors weighing more than 10 lbs., tighten the adjustment knob when monitor is at desired height.

7

8

Adjustment Knob

8-32 x 3/4" Screw

Routed Cables

Cable Access Holes (2)

Cable Management Hole

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Charging Your Cart

Once cart is fully set up with all electronic devices, it should be plugged into a medical grade outlet. The cart should fully charge before deploying (Note: All carts are shipped with a 30% charge. If storing in warehouse before deploying, charge fully).

While the cart is charging, the LED on the power system external user interface will flash until the battery is 100% full.

For LiFe Batteries: Allow up to 2 hours to fully charge.

For SLA Batteries: Allow up to 5 hours to fully charge.
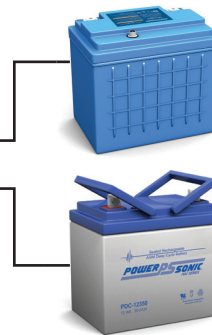
Testing Your Cart

To test your cart for power, the unit needs to be turned on. To do so, press and hold the power button on the power system user interface for approximately 2 seconds.

The power system will beep and the far left LED light will turn on. At this point, all powered devices connected to the outlet strip should receive power. Once on, the LED Keyboard light may be used. Press to turn light on/off. The LED Keyboard light has a 5 minute timeout function just in case the light was not turned off by the operator.

⚠ Note: Monitors, laptops and other devices will need to be manually turned on.

Software Pre-Installation/Installation Note:

To download the latest software go to: www.altus-inc.com/downloads.

Double-click the MPM View installer icon to start the install. MPM View will automatically detect the MPM power unit attached to the PC workstation USB port.

Power System Overview

Clio External User Interface

The easy-to-read battery user interface, which is located on the front surface of the cart handle, gives the user a real-time status of the battery. Each LED will illuminate in several sequences to indicate the approximate charge level of the battery.

On/Off Indicator | Battery Charge Level | Power Button | Mute Button | Keyboard LED Light
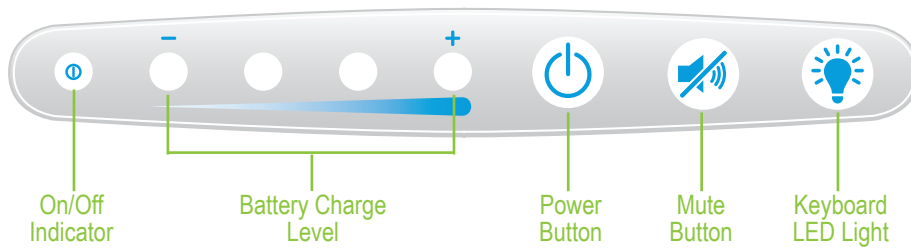
- The first LED displays power on/off indicator
- LEDs two through five indicate charge level and correspond to a percent of charge range.
- Power Button (third to last button on right) - To power up, press and hold for 2 seconds, and the on/off Indicator will beep and power on.
  To power down, press and hold for 2 seconds, and the on/off Indicator will beep and power off.
- Power Alert Mute Button (second to last button on right) - If the battery level falls below 10% for LiFe Battery an alarm will sound. This button will mute the alarm.
- Keyboard LED Light (last button on right) - To turn on, press button. The light will automatically turn off after 5 minutes or if button is pressed again.

Using the Power System

Turning On System	Turning Off System	Mute Button Use
Press and hold power button for approximately 3 seconds	Press and hold power button for approximately 3 seconds	Press and hold until audible alarm discontinues
Fuel Gauge/Power System will beep. The LED on the left side turns green. All components will receive power.	Fuel Gauge/Power System will beep. LED on left side will turn off. If Power System is plugged in, the other LED lights will remain lit to show battery level. All components will NOT receive power.	Fuel Gauge/Power System will beep. Audible alarm will silence as long as battery level is above 10%. When at 10%, the alarm, even if muted, will resound every minute. Action to take is to charge the battery or shut down the unit.
Use this during: • Initial start-up • After replacing battery • If system has been shut down • If system has shut itself down after reaching low battery level	Use this during: • If cart will not be used or plugged in for an extended period of time • Before replacing battery • If Power System will be serviced	Use this during: • When the audible alarm first goes off at the 20% battery level remaining. When alarm sounds, plug in cart to avoid damage to battery.

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Power System Overview Continued

LED Position 1 (Power On/Off)	
Solid Green - System is on and all components will receive power.	
No Light - System is turned off. If cart is plugged in, unit can still be charged.	

LED Position 2-5 (Charging Level)	
Flashing Red - Less than 5% battery life remaining. Plug in unit immediately.	
Flashing Yellow - Less than 10% battery life remaining. Plug in unit as soon as possible.	
Solid Green - Battery is at least 90-100% charged. Component should still be plugged in when possible to maximize battery life.	
Flashing Green - Each LED flashing green reflects the level of charge achieved during recharging.	
No Light - Power System is turned off or battery is not properly connected to the power system.	

LED Position 5 (Charging Status when plugged into wall outlet)	
Solid Green - Battery is full	

Charge Level Indicator Summary (Discharging)

Approximate Battery Charge Level	Indicates On/Off Only	−			+	Low Battery Alarm
76%-100%	***	Green	Green	Green	Green	OFF
51%-75%	***	Green	Green	Green	OFF	OFF
26%-50%	***	Green	Green	OFF	OFF	OFF
11%-25%	***	Green	OFF	OFF	OFF	OFF
Low Battery Warning	***	Yellow*	OFF	OFF	OFF	ON* 6-10% Default, User Settable
Low Battery Critical	***	Red**	OFF	OFF	OFF	ON** 0-5% State of Charge

* Battery Low:
  LED 2 Flashing Yellow ON for 1 second, OFF for 1 second. Buzzer should beep once per second, until silenced by pressing "Alarm Mute button.

** Battery Low Critical
  When State of Charge level falls below 6%, LED 2 will flash RED 1/2 second ON, 1/2 second OFF. Buzzer will beep 2X each second - until silenced by pressing "Allarm Mute" button.

***Output On LED Behavior
  LED 1 is on when output is on and off when output is off.

Battery Removal and Replacement

⚠️ Only use batteries specified by ALTUS. Failure to do so will void the power system warranty. Call customer service for further details.

⚡ Do not replace battery in oxygen rich environments sparking may occur.

⚡ Always unplug the power cord from the wall outlet when removing the battery.

Battery Removal

Tools Needed: 1/8" Allen Wrench

Step 1: Power Down System

⚠️ A. Turn off any components plugged into cart
B. Turn off Power System by Holding On/Off Button for 2 seconds

Step 2: Long-term Storage (more than 2 months)
Warning: If cart will not be used for more than 2 months, turn off the cart by holding the ON/OFF Button. The battery will need to be recharged every 30 days to prevent damage.

Step 3: Remove back access panel by loosening and removing (2) screws (See Fig A).

Step 4: Remove back panel. Remove strap and slide battery from base (See Fig. B)

Step 5: To access battery cable (to disconnect from controller) loosen and remove (2) screws from the front panel of base (See Fig. C)
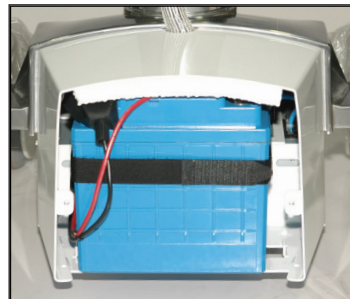
Step 6: Disconnect battery harness from controller. (See Fig. D)
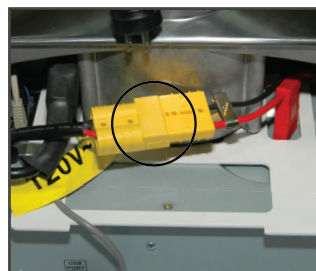
(Fig A)

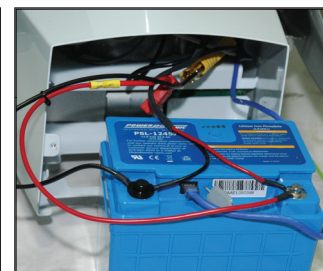(2) Screws

(Fig. B)

Remove Strap

(Fig. C)

(2) Screws on both sides

(Fig. D)

Disconnect Yellow Battery Harness

(Battery terminals) Located in back on Ascend EL
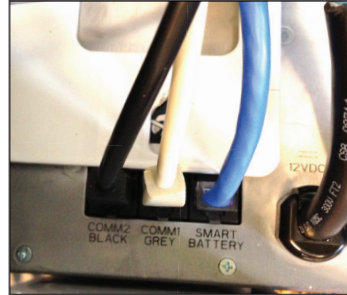
Battery Removal and Replacement

Battery Removal Continued

Step 7: Disconnect "blue" RJ45 cable from controller. (See Fig. E). If replacing with a SLA battery, this step is not needed.

If blue RJ45 cable cannot be accessed, the controller can be removed by loosening and removing (2) screws (See Fig, F). Once screws are removed, simple slide controller out and disconnect Blue RJ45 cable from slot. (Note slot location for new battery cable).

Step 8: Replace with new battery and repeat Steps 1-7 in reverse order. Make sure all connection are secure ("clicking" them in place).
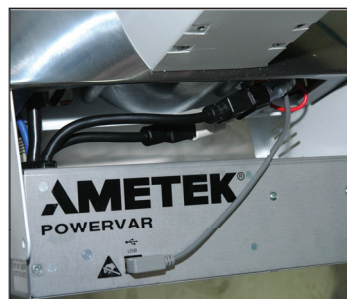
(Fig. E)

"Blue" RJ45 Cable

(Fig. F)

(2) Screws - Phillips drive

Slide out controller in
Ascend EL Carts

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Battery and Power System Removal and Replacement
WARNING!
DO NOT CONNECT THIS UNIT TO BATTERIES NOT SUPPLIED BY ALTUS
WITHOUT VERIFYING CONTROLLER SETUP AND OTHER OPTIONS WITH ALTUS.

If replacing the LiFe (Lithium Iron Phosphate) battery with a SLA battery or SLA to LiFe, the following steps need to be completed. If the MPM software has been installed, this will help with step #4.

1. All cables to and from controller must be connected, including the battery and its cables and connections.

Both the AC-In and AC-out connector ends include a locking feature to prevent from pulling apart. To disconnect pull back both "red" tabs. **Note: Older models may not have this feature (red tabs) so simply disconnect.**
Controller must first be <u>OFF</u> (no lights on the Remote User Interface) and connected into AC power.

If using the MPM Software use this step. If not, proceed to step 2.
Connect the USB cable into the technology component within the cart (or into a resident laptop with the MPM software loaded).

 ← No Lights   ← USB

2. Wait for the double yellow to appear on the interface.

3. When this happens, press and hold the mute button for 5 seconds. One "beep" will be made immediately. Within 3-5 seconds after the initial "beep", a second "beep" will be heard.

Keep holding down the mute button until a scrolling light sequence appears (release mute button at this time). This will look like all of the green LED lights going lighting up in order and then back off in order. When green light sequence is complete, the controller will show a Yellow LED and Green LED and then will shut itself off (all lights will turn off) and then will "Reboot" itself. When controller reboots, the remote user interface will show the battery level of the connected battery.

4. The "battery reading for confirmation" will only be available if MPM View is being utilized. The cart is ready to be used.

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Troubleshooting

Diagnostics & Troubleshooting

This section includes a brief troubleshooting table and the complete list of Events and condition codes that are logged and displayed in *MPMView*

Troubleshooting

The troubleshooting information provided in this section should help you discover the cause of most commonly encountered difficulties. Before following the troubleshooting steps provided, be certain that

- o the MPM is connected to a properly working outlet,

- o the line voltage to the MPM is within specified boundaries

Problem	Possible Cause	Action you should take
MPM does not power up and has no audible alarm	On/Off button is not pressed long enough	Press and hold the On/Off switch for at least 3 seconds.
	Invalid Battery and Invalid Input AC.	Check wall socket and test for proper line voltage.
	MPM input power cord is not plugged in	Plug in input power cord
	Output fuse is open	Reduce load replace fuse and test
Backup time is less than expected	Battery is not fully charged or battery is dead.	Recharge battery for at least 24 hours and retest backup time.
MPM is normal, but the load will not turn on.	Load input power cord is loose or not connected. Output Fuse is blown.	Verify computer input power cord Verify output wiring harness within cart assembly Check Output Fuse located on end of MPM unit . (see p.31)

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Troubleshooting

Events & Conditions

The MPM will indicate the presence of Warning (yellow) and Severe (red) Alarms and Conditions via the RUI and via the ClinicView taskbar application as shown below.
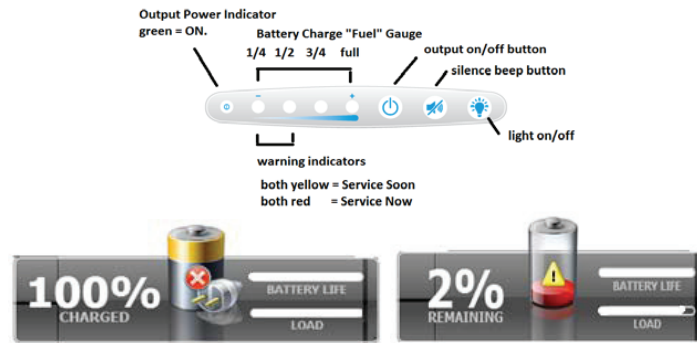
The specific alarm that is raising the Yellow or Red indicator will be logged and displayed locally in the *TechView* application (taskbar app, right click, Advanced) or over the network (LAN) via CIO/FleetView application.

The table below lists the specific alarms and what they mean.

	INDICATIONS DURING NORMAL POWER SYSTEM OPERATION		
Code	**As displayed in MPMView**	**As displayed in RUI LEDs**	**What it means**
	No Display	1st fuel gauge LED green, top fuel gauge led Red	**USER ACTION: None – normal start up indication.** Technician Note: the charger inverter is powering up
NONE	Normal Operation	Output AC LED green or off. One or more fuel gauge LED(s) Green.	**USER ACTION: note "fuel gauge" LEDs on RUI or battery charge level and estimated minutes available on MPMView taskbar icon. Blinking green fuel gauge LED indicates battery recharge in process**
14-054	Battery Recharge in process		
24-034	Battery Charge Threshold: Low	Bottom fuel gauge LED Yellow	**USER ACTION: "<3-minute warning" connect cart power to AC soon to recharge the battery**. Technician Note: 1st level warning for low battery charge level, triggered when either threshold for % charge or estimated minutes is reached. Default thresholds are 10% or 3 minutes. These settings can be modified using MPM TechView software.
34-053	Battery Charge Threshold: Low-Critical	Bottom fuel gauge LED Red	**USER ACTION: battery nearly depleted, connect cart power to AC now to recharge the battery.** Technician Note: Final warning to recharge battery – shutdown imminent. Hard coded within MPM to signal when charge level is less than 5% of full capacity.

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Code	As displayed in MPMView	As displayed in RUI LEDs	What it means
14-070	Charger is in PreCharge Mode	RUI will blink the 4 "fuel gauge" LEDs low to high in a "rolling green" pattern	**USER ACTION: Use the cart only when connected to AC power. When the alarm clears – note battery charge state before disconnecting from AC power.** Technician Note: PreCharge is a special charger operating mode designed to reactivate a Smart Lithium battery in self-protect mode. This alarm presents on startup if all three conditions are true: 1.) MPM is configured for Lithium battery and 2.) invalid battery terminal DC voltage detected by the MPM and 3.) the battery communicates its state as self-protect mode, or there are no communications with the battery. The charger will remain in this mode for up to 30 minutes waiting an indication that the battery has returned to normal function. After 30 minutes, this condition will escalate to a yellow warning indicating that the battery needs service attention. (See 24-032 Service Check: Battery Connection).
14-056	Smart Battery: Reports Full Discharge	none	**USER ACTION: None** Technician Note: This alarm originates with a smart lithium battery and detected by MPM via battery communication. The Yellow and Red low battery alarms would normally appear before this alarm. The alarm is informational and is logged in MPMView event log for subsequent analysis if needed. The alarm will trigger or low battery alarms if not already activated.
14-057	Smart Battery: Reports Terminate Charge	none	**USER ACTION: None** Technician Note: This alarm originates with a smart lithium battery and detected by MPM via battery communication. The alarm is informational and is used by the MPM to manage charger operation.
14-058	Smart Battery: Charge Threshold Low	none	**USER ACTION: See Low battery alarms 24-034 or 34-053** Technician Note: This alarm originates with a smart lithium battery and detected by MPM via battery communication. This condition raises the yellow or red Low Battery alarms (24-034 or 34-053) if not already active based on MPM battery charge detect thresholds.

14-059	Smart Battery: Reports Terminate Discharge	none	**USER ACTION: None** Technician Note: This alarm originates with a smart lithium battery and detected by MPM via battery communication. The alarm is informational in that it will cause the MPM to immediately turn off output power before any other indications can be presented. Normally this alarm may only appear if the cart is left running from battery and no action was taken when yellow or red low battery alarms were presented on the RUI.
14-060	Smart Battery: Needs Calibration	none	**USER ACTION: None** Technician Note: This alarm originates with a smart lithium battery and detected by MPM via battery communication. Usually is related to long periods of storage without regular use or recharge. This alarm may clear after a few full recharge and discharge cycles. If the condition persists, use the Diagnostics Report option in MPM TechView software to retrieve all internal battery information as an html file than can be sent to cart OEM for interpretation.
14-065	Smart Battery: High Error Rate on Communications Line	none	**USER ACTION: None** Technician Note: This alarm is raised by the MPM when there is a problem with consistent communications with the battery. Remedy: Verify battery communications cable is good and properly connected.
10-194	Charger current reduced	None	**USER ACTION: None** Technician Note: Indicates that the MPM charger is operating at reduced power due to low input AC line voltage or an over temperature condition (see yellow alarm 20-134) Use MPM TechView software to review input line voltage as measured by the MPM. Move the cart to a different circuit with higher AC line voltage or accept slower recharge time..

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INDICATIONS OF PROBLEM IN POWER SYSTEM - Yellow Warnings

Code	As displayed in MPMView	As displayed in RUI LEDs	What it means
20-134	Service Check: Temperature Warning	Two yellow LEDs	**USER ACTION: OK to use the cart. Contact Cart Manufacturer** Technician Note: This is the 1st level warning that the MPM internal temperatures are nearing a level where immediate thermal shutdown could occur if temperatures continue to increase. Remedy: Check that MPM ventilation is unobstructed. If no visible obstruction, MPM unit may need cleaning or other Service.
24-032	Service Check: Battery Connection	Two yellow LEDs	**USER ACTION: OK to use the cart on AC power. Contact Cart Manufacturer** Technician Note: The MPM unit detects no voltage across the battery terminals. Battery may be disconnected, or there may be a blown fuse in the battery cable. The MPM can still power up when connected to AC input line. Remedy: Verify battery DC power connections. Verify battery condition.
24-050	Service Check: Battery Parameters not Initialized	Two yellow LEDs	**USER ACTION: OK to use the cart on AC power. Contact Cart Manufacturer** Technician Note: This Alarm raised when the MPM is configured to detect a smart battery but is unable to establish communications to the battery. The MPM would then be operating in Smart Discovery Mode at reduced charger current. Remedy: Use MPM TechView software to verify battery configuration. Configure the unit for the actual battery attached. If battery configuration is correct, verify that battery communications cable is in good condition and fully connected to battery and MPM communications ports..
24-066	Service Check: Smart Batteries - Communication	Two yellow LEDs	**USER ACTION: OK to use the cart on AC power. Contact Cart Manufacturer** Technician Note: This alarm is raised when MPM unit has lost communication with a SmartBattery. This is different than not detecting a smart battery during startup (see 24-050). The alarm may clear if the MPM unit isable to recover the battery. Communications. Remedy: Could indicate Smart Battery has entered a Safe/Protect Mode from being left depleted and without charge for too long. If the alarm persists, check SmartBattery cable connections.

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24-051	Service Check: Replace Battery – Health Threshold	Not presented on RUI	**USER ACTION: OK to use the cart on AC power. Contact Cart Manufacturer** Technician Note: This alarm is raised when the measured battery capacity is less than 50% of original design capacity (measure of State Of Health). The default SOH threshold is 50%, this value can be modified using MPMView. Remedy: Replace the battery or accept significantly reduced time from battery.
24-063	Service Check: Replace Battery – Date Threshold	Not presented on RUI	**USER ACTION: OK to use the cart on AC power. Contact Cart Manufacturer** Technician Note: This alarm is raised when the comparison of MPMView host PC system date to Battery Replace Date indicates that the battery Age is older than the Battery Age Threshold. Default is 18 Months, configure via MPMView. Remedy: Option to ignore this threshold and wait for Health thresholds to confirm battery capacity is degraded
20-147	Lost Device Communications	Not presented on RUI	**USER ACTION: OK to use the cart on AC power. Contact Cart Manufacturer** Technician Note: This an MPMView software warning code. MPMView is unable to communicate with MPM unit. This could be caused by the USB cable being disconnected, the USB port on the computer has failed or the MPM is off and disconnected from AC. Remedy: Verify USB cable is good and properly connected. Verify PC USB ports are active and operational.

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INDICATIONS OF PROBLEM IN POWER SYSTEM - Red Warnings

Code	As displayed in MPMView	As displayed in RUI LEDs	What it means
30-189	Input Frequency Out Of Range	Two Red LEDs	**USER ACTION: OK to use the cart on AC power. Contact Cart Manufacturer** Technician Note: This alarm is raised if the frequency of the input AC power to the MPM unit is out of range and the output can only be supplied from battery power. Remedy: verify if AC circuit is on generator source, switch cart to a different branch circuit , or check with facilities management.
36-080	Output Overload	Two Red LEDs	**USER ACTION: Turn off cart power, unplug from AC Power. Contact Cart Manufacturer** Technician Note This alarm is raised if MPM detects its VA output is over 110%.
36-081	Output Overload	Two Red LEDs	**USER ACTION: Turn off cart power, unplug from AC Power. Contact Cart Manufacturer** Technician Note This alarm is raised if MPM detects its Watt output is over 110%.
33-038	Service Required: Charger	Two Red LEDs	**USER ACTION: Turn off cart power, unplug from AC Power. Contact Cart Manufacturer** Technician Note This alarm is raised when MPM is attached to a Smart battery and battery indicates an "OverCharged" alarm Remedy: Replace the MPM charger inverter unit.
30-190	Service Required: Output Bad		**USER ACTION: Turn off cart power, unplug from AC Power. Contact Cart Manufacturer,.** Technician Note MPM detects a problem in inverter or output circuits; output relay is shorted, inverter voltage too high or too low, inverter failure or output fuse open. Remedy: Replace the MPM charger inverter unit.

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30-192	Service Required: EEPROM failure		**USER ACTION: Turn off cart power, unplug from AC Power. Contact Cart Manufacturer** <u>Technician Note</u> MPM detects a serious internal error. Return for Service. Remedy: Replace the MPM charger inverter unit.
34-055	Service Warning: Smart Battery Over Temp	Two Red LEDs	**USER ACTION: Turn off cart power, unplug from AC Power. Contact Cart Manufacturer** <u>Technician Note</u> This alarm is raised when MPM is attached to a Smart battery and battery indicates its internal temperature has exceeded internal threshold. Remedy: If the condition persists, use the Diagnostics Report option in MPM TechView software to retrieve all internal battery information as an html file than can be sent to cart OEM for interpretation.

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Power System Removal and Replacement

(Fig. A)

⚡ Power System should only be accessed if approved by Altus

⚡ Always unplug the power cord from the wall outlet when removing the Power System.

(2) Screws on both sides

Power System Removal

Phillips Head Screwdriver and 1/8" Allen Wrench

Step 1: Power Down System
- A. Turn off any components plugged into cart
- B. Turn off Power System by Holding On/Off Button for 2 seconds

(Fig. B)

(2) Screws - Phillips drive   Slide out controller in Ascend EL Carts

Step 2: Unplug Power Cord from Wall Outlet

Step 3: Remove front panel (1/8" Allen Wrench needed)
- A. Loosen and remove (2) screws from sides (See Fig A)
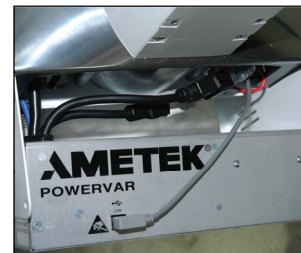
Step 4: Remove controller from base (Phillips Head Screwdriver needed)
- A. Loosen and remove (2) screws (See Fig B)
- B. For Ascend EL Carts, slide out controller (See Fig. B).

Step 5: Gently slide controller out of base.

(Fig. C)

Controller Slots

Step 6: Disconnect Cables (6) from Power System
- A. Unplug Black and Grey CAT 5 cables from unit (See Fig C)
- B. Unplug Blue CAT 5 Smart Battery Cable from unit (See Fig C)
- B. Unplug USB cable from unit (See Fig D)
- C. Unplug Yellow cable from unit (See Fig D)
- D. Unplug AC Input In/Out Power cords. (See Fig D)

Step 6: Remove Power System

Step 7: Replace with New Power System
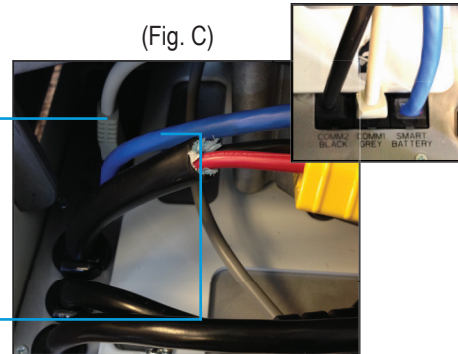
Repeat steps 1-6 in reverse.

(Fig. D)
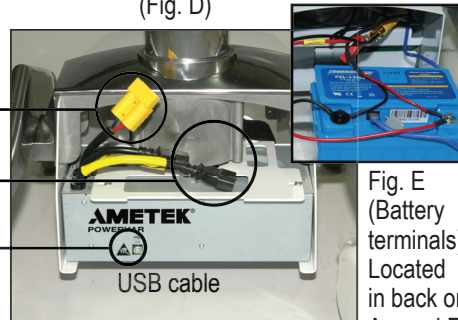
USB cable

Fig. E (Battery terminals) Located in back on Ascend EL

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Troubleshooting

Cart will not power up:

- Plug power cord into a working hospital grade outlet. Note: Do not plug into a multi-outlet surge distribution strip.
- Check to make sure power cord is plugged securely (See Fig. A).

(Fig. A)

- Check to make sure the Power System is charging when plugged in (See Fig. B) (Right four (4) Green LED lights will be flashing if charging).
- Check to make sure all cables to the power system are secure (See Fig. C). the Blue (LiFe) RJ45 cable ends are secured/snapped into place. First end location is in the LiFe Battery (see Fig. 1). Second end location is in the power controller

(Fig. B)

- Make sure Power connection from the power controller is secure (Fig. D) Both the AC-In and AC-out connector ends include a locking feature (red tabs) to prevent from pulling apart. To check the connections are secure, look at red tabs and pull back and make sure they are locked into place. **Note: Older models may not have this feature (red tabs) so simply disconnect.**
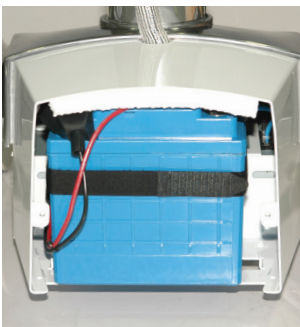
Fig. C
(LiFe Battery - Back side)

Fig. C
(Power Controller- Front side)

Fig. D
(Power Connection is Secure)
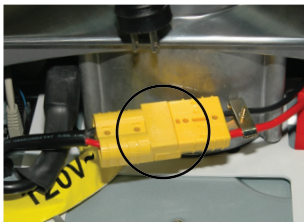
Fig. E
(Battery terminals)

Fig. E
(Battery terminals)
Located in back on
Ascend EL

Cart will not power on or charge: Perform a voltage meter reading by taking a reading at the batteries +/- terminals and then again at the +/- terminals on the controller.

Normal reading: 10.5V-13.4V on a 12V battery
Abnormal reading: 13.4V and below 10.5V

Actuator is connected directly to the battery. If battery is dead, the actuator will not work. When plugged in, the cart will charge first then be able to service the actuator.

Cart will not charge:

- Check to make sure external spiral cord secure within the cart.
- Ensure outlet is functionally operational.
- Plug power cord into a working hospital grade outlet. Note: Do not plug into a multi-outlet surge distribution strip.
- Check and make sure the External User Interface (EUI) indicates the unit is charging when plugged in.
- If charge level is low (last one or two LED lights lit) let charge until full.
- If cart still does not charge, check to make sure all cables to the power system are secure.

- If cart still does not charge, resetting the controller is recommended (this is called a Hard Reset). To perform a hard reset, disconnect the yellow battery terminals, wait for 10 seconds, then reconnect battery terminals. Make sure both end "click" together. Note: The Hard Reset will remove all current from being fed into the controller and will assist with a battery that remains in battery recovery mode.

ClioMed Software User Instructions

TABLE OF CONTENTS

PRODUCT SUMMARY

PARTS INCLUDED

- (1) Mechanical override key

- (2) Duplicate keys for technology storage door

- ClioMed Software (installed)

PRECAUTIONS

- The ClioMed cart needs to be powered on to use the tablet and to access the drawers.

- The embedded software comes pre-programmed with a default user named "Factory Admin". It is recommended that this user account is disabled after adding the first administrator account.

- For best security and accountability, a separate user account is recommended for each user of the cart (see "User Management"). Users should be discouraged from sharing their PIN code with any other person.

PRODUCT FEATURES

- 6 individually-locking drawers.
- Touchscreen user interface.
- Removable bins and reconfigurable dividers for effortless restocking.
- Large worksurface for preparing medications.
- Override key.
- Keyed locking technology storage area.
- Central Management Software for managing multiple carts from a single PC (see "Other Manuals and Software").
- RFID Badge Reader (Optional Accessory)

PRODUCT SPECIFICATIONS

- Connectivity: 802.11n wireless

- Touchscreen: 360 x 210 pixels, 10 finger capacitive touch

- Database Architecture: MySQL

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ACCESSING THE CART FOR THE FIRST TIME

Each cart comes programmed with one user account. The user name is **"Factory Admin"** and the pin code is **10597**. **For security reasons, it is strongly recommended that a new administrator is created and the Factory Admin account is disabled.** To do so:

1. Login by entering the code **10597** and pressing the unlock icon.
2. Create a new administrator account (see "Adding Users" in the User Management section on page 33).
3. Logout by pressing the lock icon.
4. Login with the new administrator account that was just created.
5. Disable the Factory Admin user (see "Disabling Users" User Management section on page 34).

USING THE TABLET USER INTERFACE LOGIN SCREEN

The login screen appears when no user is logged in. If the login screen is displayed, the cart drawers are locked. To login, enter a PIN code and press the unlock icon.
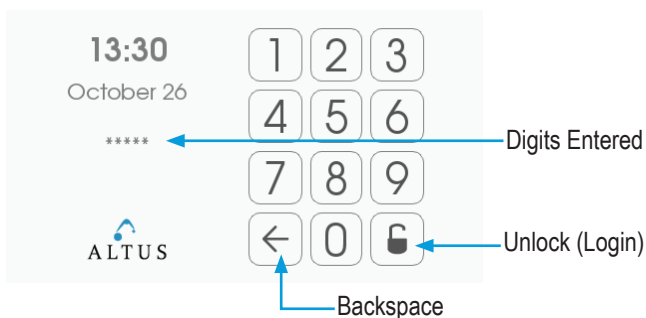
After 4 failed login attempts, the software will display "Logins blocked" and prevent additional login attempts for 10 minutes or until an administrator successfully logins.

If a RFID Badge Reader is installed and a Badge/User is activated, then simply place card over the "RFID" symbol and the main user screen willbe displayed.

*To activate a new Badge, use your pin code to gain access the main user screen and go to the Settings screen (See "Adding Users" in the User Management section on page 33).

MAIN USER SCREEN

After successfully logging in, an image of the cart will be shown on the screen.
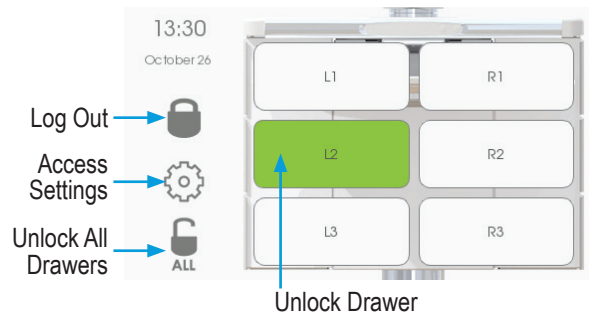
To access drawers, follow the instructions below in ("Accessing the Drawers " on page 28).

Other options may be accessed from this screen:

Pressing the settings icon to access the settings menu (see "Settings Menu" on page 30)

- Press the unlock all icon to unlock all drawers (see "Unlocking All" drawers on page 29).

- Press the lock icon to logout (see "Locking the Drawers" on page 29).

ACCESSING THE DRAWERS

To open a drawer, first press the desired drawer icon to unlock the drawer. The drawer icon will turn green, indicating that it has been unlocked. The drawer selected will automatically "kick open" approximately 1" for easy identification and access.
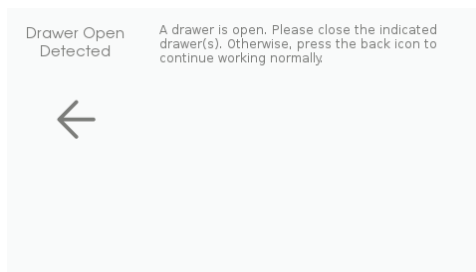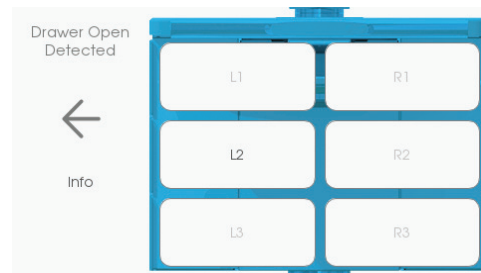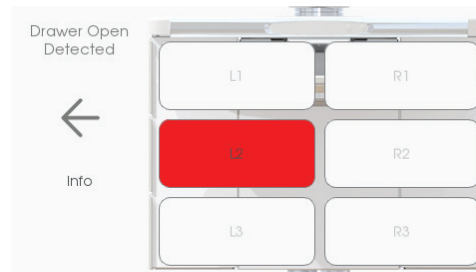

To close a drawer, press on drawer front until it engages into the latch. There will be audible "click" engages. Once closed, the drawer will automatically lock.

Notes:

- Multiple drawers can be opened at once by pressing multiple drawer icons.
- If "Unlock All" is enabled, an icon will appear on the Main User Screen. Pressing it will unlock all drawers (see Device Settings).

ALARMS

If drawer is left open or lock not engaged, an alarm feature with a diagram of the drawer layout and lighted drawer indicating the open will be shown on the tablet screen. An 'alarm disable' option is required (select info to see information about the warning or close drawer to turn warning off).

Drawer Open Detected   A drawer is open. Please close the indicated drawer(s). Otherwise, press the back icon to continue working normally.

If for any reason the drawers cannot be accessed by the software, a mechanical override is provided. Tubular key cams (2) are located underneath the drawer module. Each set of drawers (3 on each side) has its own key cam and one access key.
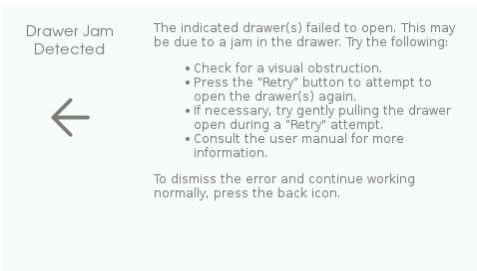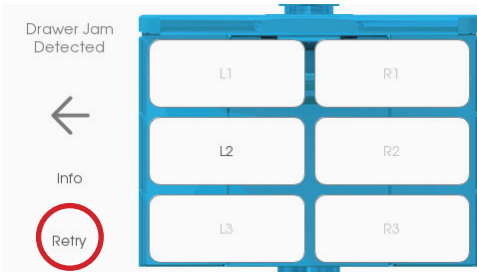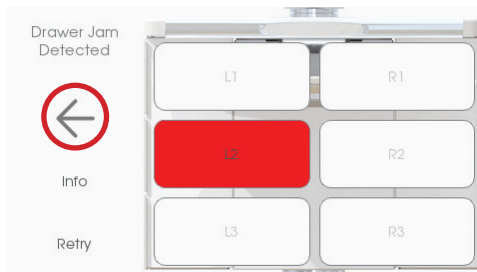
A "Drawer Jam" diagram will appear if a drawer fails to open or close properly.

The "Back Arrow" dismisses the error and returns to the previous screen (or login screen after the timeout period).

"Retry" attempts to open the drawer again. "Info" displays indicators which help to check for an obstruction and how to fix the jam.

LOCKING THE DRAWERS

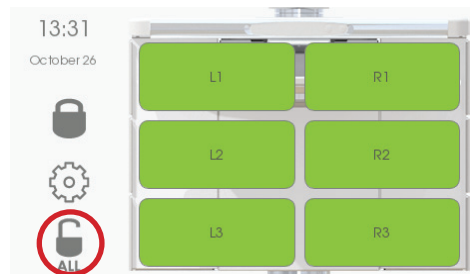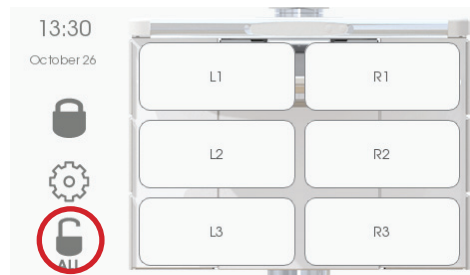The lock feature will log the current user out of the system.

To lock the drawer(s), press the drawer in and engage lock. To log out, press the "lock icon."

The system will display the login screen after the user has been logged out.

"UNLOCKING ALL" DRAWERS

Selecting the "Unlock All" icon will unlock all 6 drawers. All drawers will "kick-out" for proper opening.

Notes:

- It is recommended that a user always locks the system before leaving the cart to prevent an unauthorized user from accessing the cart.

- The system will automatically lock after a period of inactivity. The duration before the system locks is set in the timeout feature under "Device Settings" on page 31.
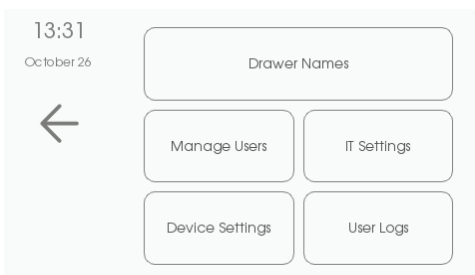
SETTINGS MENU

The settings menu provides access to features that affect how the cart operates and who has access to specific features of the cart. Access logs may also be viewed through this menu. To access the settings menu, press the settings icon on the Main User Screen.

The settings menu has five options:

- Drawer Names – Modify the names of drawers.

- Manage Users – Add, disable or modify users access to the device (see "User Management").

- Device Settings – Modify settings that affect operation of the device.

- IT Settings – Modify technical aspects of the cart.

- User Logs – View logs of user access to the cart.

Notes:

- Not all options will be available for every user. The user type determines what access a specific user has to settings (see "User Types" on page 33).

- All users can modify drawer names and view user logs.

- The back arrow appears throughout the settings menu and sub-menus. Pressing this icon will return the user to the previous screen.

BIN/DRAWER NAMES

There are two ways to modify drawer names. The first method is to use the drawer names menu. This method is convenient for modifying multiple drawer names. The second method is to directly modify a drawer name from the Main User Screen, which is useful for quickly changing one drawer name.

Using the Bin Names Menu

To access the Drawer Names Menu, press the "Drawer Names" button from the Settings Menu. A screen will appear that lists all drawers and their current names.
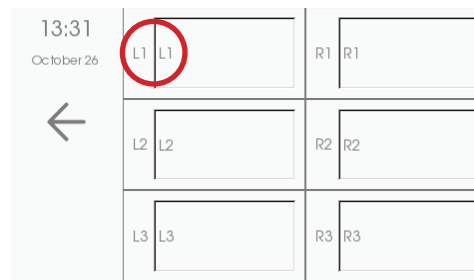
Select the drawer to be renamed by selecting the current name. An on-screen keyboard will appear for modifying the drawer name. Enter the desired name and select the "green check" to commit the change or "Cancel" to discard the change. Press the back arrow to return to the Drawer Names Menu.

Proceed to any other drawers that will be renamed. When all changes are complete, press the back arrow to return to the Settings Menu.

Using Long-Press to Modify a Specific Drawer Name

From the Main User Screen, press and hold the drawer icon for it to be renamed. The same dialog box will appear with the current drawer name and keyboard to rename the drawer. Enter the desired name and select the "green check" to commit the change or "Cancel" to discard the change. Press the back arrow to return to the Main User Screen.

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DEVICE SETTINGS

The device settings menu provides options to change functionality of the cart. There are three settings that can be modified:
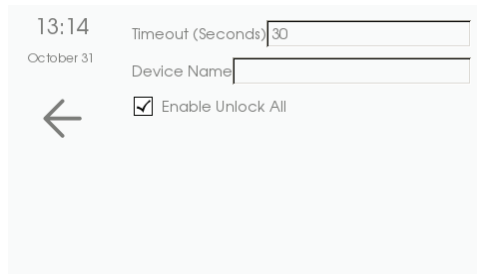
- **Timeout** – Specifies the time of inactivity until the cart automatically locks. If no user activity occurs for the specified time, the system will automatically log the user out.

- **Device Name** – Device Name may be set to an intuitive name to provide easy identification on the local network and in the central management software. The Device Name becomes the network host name for the device (see "IP Address and Hostname" on page 35). Ideally, device name should be unique and used to distinguish it from other devices on the network. The device name is also displayed in the user logs as the "device" name (see "User Logs" on page 32).

- **Enable Unlock All** – This checkbox enables a button on the Main User Screen to unlock all bins and the supply door with one press. This feature is enabled by default.
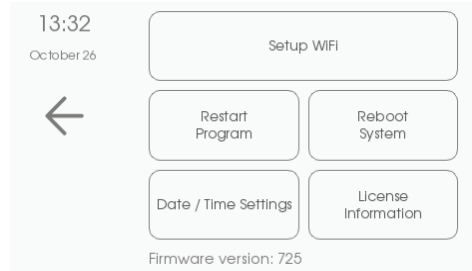

Unlock All

Note:

- Spaces and special character are not allowed in the Device Name due to restrictions on network host names.

IT SETTINGS

The IT Settings Menu provides options that affect technical aspects of the device. Options include:

- **Network Settings** – View and modify network settings for the cart (see "Network Configuration" on page 33).

- **Date & Time Settings** – Change date and time, configure time zone (see details below).

- **Restart Program** – Restarts the user interface.

- **Reboot System** – Completely reboots the electronic hardware in the cart. The system should be rebooted after modifying any network settings.

- **License Information** – Displays license information for the embedded software

Date & Time Settings

The date and time settings menu allows you to adjust the date and time and setup network configuration of time.
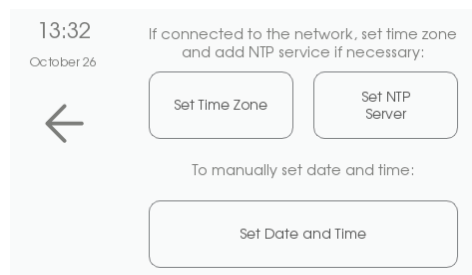
If the cart is connected to the network, it may use Network Time Protocol (NTP) to synchronize date and time to an NTP server. See the notes below regarding NTP Servers. To use this feature:

- Ensure that the cart is connected to the network (see "Network Configuration" on page 34).

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- If necessary, add or delete NTP servers by pressing the "Set NTP Server" button. By default, the cart includes the following NTP servers:

0.debian.pool.ntp.org
1.debian.pool.ntp.org
2.debian.pool.ntp.org
3.debian.pool.ntp.org
— NTP Servers

Add NTP Server

Add NTP Servers Button

To add a server, press "Add NTP Server". To delete a server, click on the server address you wish to delete and confirm the deletion.

- Set the time zone by pressing the "Set Time Zone" button from the main Date & Time Settings screen. You may choose a specific time zone or a country and region.

If no network connection if available or you prefer to manually set date and time, press the "Set Date & Time" button on the main Date & Time Settings screen.
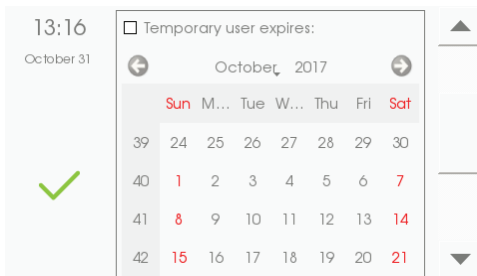

Use the dialog to set the date and time. Press "Save" to commit the change or "Cancel" to discard it.

Note:
- Network Time Protocol (NTP) is a network protocol for clock synchronization between computer system

- In most situations, the list of NTP servers does not need to be modified. Contact your network administrator for questions about NTP servers.

- If date and time are set manually, the incorrect date and time may be displayed if the cart loses power (i.e. in the case of a power outage). Time zone and NTP server settings are retained through a power outage.

USER LOGS

The User Logs screen displays information about access to the cart. It displays who has accessed contents of the cart, who has modified settings, and who has modified user settings.
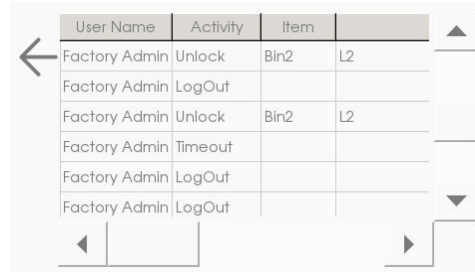
There are 6 headings in the user logs screen. The table below describes each:

| Heading	Indicates…	Examples
User Name	Who performed the activity	User Name or "System" for automated activities (i.e. during startup).
Activity	What was done	• Lock / Unlock / Logout • ChUser (a user was added or modified) • ChSettings (a setting was modified)
Item	The item that was affected	Drawer Number
Description	Details of the activity	• Name of drawer that was accessed • Modification made to user account • Description of setting that was changed. • Startup events and any errors
Date & Time	Date and time that the activity occurred	4/15/2017 16:53:16
Device	The device name	Shows the device name set under "Device Settings"

USER MANAGEMENT

The user management screen allows addition, modification, and disabling of user accounts. To access the screen:

- Login using an administrator or manager account

- Press the "Settings" icon

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- Press "Manage Users" and the user management screen will appear.
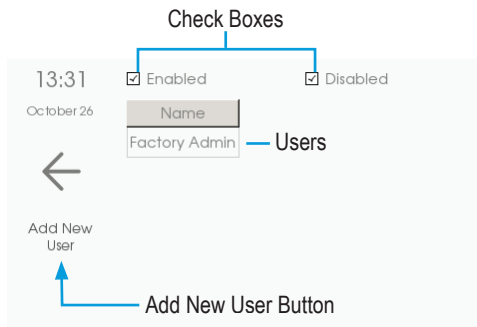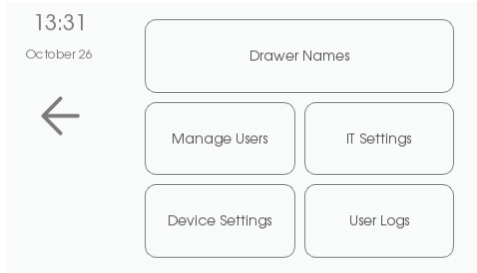
The user management screen displays a list of users. The checkboxes at the top of the screens selects whether enabled and disabled users should be displayed in the list. By default, both enabled and disabled users are displayed.

Note:
- The cart comes pre-programmed with one user named **"Factory Admin"** with PIN code **10597** and administrative privileges. It is strongly recommended that a new administrator account is created and the "Factory Admin" account is disabled before putting the cart into use.
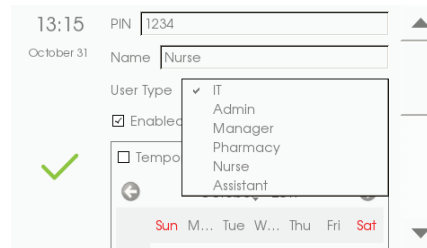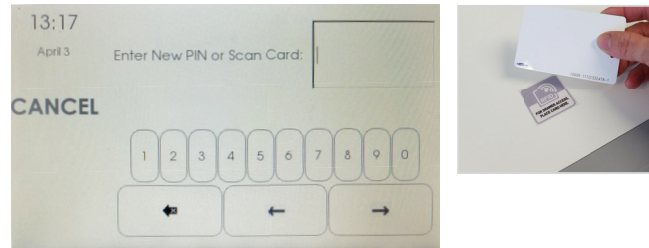
USER TYPES

There are six user types with pre-configured access rights. The table below shows access rights for each type of user. All users can view logs, access supplies and modify drawer names.

User Type	Access Med Bins	Modify Users	Modify Settings
Admin	Yes	Yes	Yes
Manager	Yes	*Yes	No
Nurse	Yes	No	No
Assistant	Yes	No	No
IT	No	No	Yes

* Managers cannot modify Administrator or Manager accounts. They can only modify Nurse, Pharmacy, Assistant and IT accounts.

ADDING USERS

To add a new user, access the user management screen and press "Add New User". The New User Screen will appear. Also,if the RFID Badge Reader is installed, simply scan your "badge" over the RFID labeled area, to access the "New User Screen."

- Enter a unique pin code for the new user.
- Click on the "Name" field and enter a unique name for the user.
- Choose the User Type from the drop-down menu.
- Ensure that the "Enabled" check box is checked.
- If this user should only have temporary access to the device follow the instructions described below in "Temporary Users".
- If the user's settings are correct, select the green check icon to save these settings.

MODIFYING USERS

To modify settings of an existing user, access the User Management screen.

- Ensure the appropriate "Enabled" and "Disabled" check boxes are checked. Checking "Enabled" displays users that are enabled. Checking "Disabled" displays users that are disabled. Checking both check boxes displays all users.
- Select the user to be modified
- Modify user settings as desired.
- Press "Save".
- If the user's settings are correct, press the back arrow to return to the previous screen.

Note:
- PIN code cannot be changed after a user is created (whether it was manually created or if a badge was used to create it).

DISABLING USERS

Users cannot be deleted from the device's interface. This is done so that the user does not disappear from the usage log history. Instead, a user may be disabled. A disabled user does not have access to device.

To disable or enable a user, follow the instructions above for "Modifying Users." When editing a specific user, check or uncheck the "Enabled" checkbox as desired.

Note:

- The system requires that there is at least one administrator account. You cannot uncheck the "Enabled" checkbox if the user is the last enabled administrator. You must first add or enable another administrator.

TEMPORARY USERS

A temporary user is allowed to access the device for a pre-specified amount of time. After the expiration date / time, the user's account becomes disabled and the user can no longer access the device.

This feature is helpful in managing individuals who should only have access to the device for a limited time, for example a temporary worker or a worker that is floated to another department. If desired, an expired temporary worker can be re-enabled (see "Disabling Users" above) if the employee returns to work at a later date.

To set a user as temporary:

- Create a new user if the user has never previously accessed the device (see "Adding Users") OR Modify an existing user if the user already exists on the device (see "Modifying Users").

- Ensure that the "Enabled" checkbox is checked.

- Check "Temporary user expires".

- Select the date and time that the user's account should become disabled. The default selection is 24 hours from the current time.

- Press "Save".

- If the user's settings are correct, press the back icon to return to the previous screen.

NETWORK CONFIGURATION

The device has built in network capabilities. The device will function without network connectivity, but establishing a network connection enables the following capabilities:

- Automatic date and time configuration (see "Date & Time Settings" on page 31).
- Connection to the central management software for managing multiple carts from a central location (see "Other Manuals and Software" on page 36).

Network connection may be made through Wi-Fi.

CONNECTING TO A WI-FI NETWORK

A wireless connection can be configured through the embedded software on the device. Access the Network Settings menu through the following button presses from the Main User Screen (see "Settings Menu"):

Settings Menu → IT Setting → Network Settings

The network settings menu will display the following information:
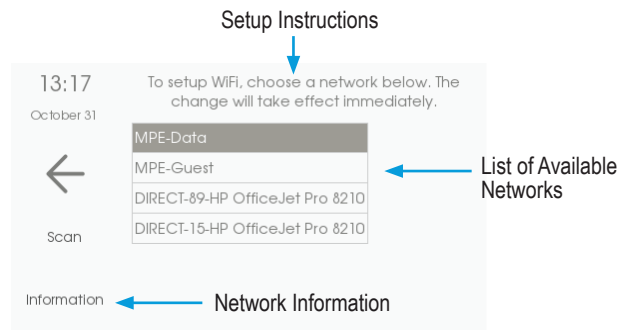
To connect to a wireless network, follow the onscreen instructions:

- Choose a network by clicking on it.
- Enter the network passphrase and press "Save".
- Press the back arrow to access IT Settings
- Press "Reboot System" and wait for the system to reboot.

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VIEWING NETWORK INFORMATION

To see details on network hardware and connectivity, access Network Settings and press the "Information" button.
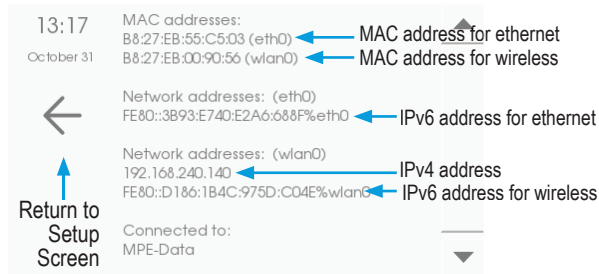
Notes:

- An IPv4 address will only appear if the device is connected to the network and assigned an IPv4 address.
- Presence of an IPv4 address (i.e. XXX.XXX.XXX.XXX) indicates a successful network connection.
- Contact your network administrator for questions regarding network information.

IP ADDRESS AND HOSTNAME

Routers and access points often assign IP address dynamically, which means that the IP address on the device could change over time. This could cause difficulties in communicating with the cart from the central management software. Therefore, it is recommended that a constant network address is established. This can be accomplished in two ways as described below:

Assign a Static IP Address

Your network administrator may be able to assign a "static IP address" to the device that does not change over time. Contact your network administrator for more details.

Assign a Hostname

The device can be assigned a hostname that is discoverable on the network. To assign a hostname, set the device name in the settings menu (see "Device Settings" on page 31):

Settings Menu → Device Settings →Device →Name

The cart name assigned also becomes the network hostname. Ensure that the name assigned is unique to devices on the network. Contact your network administrator to determine how to identify the cart by hostname on your network.

CLEANING AND MAINTENANCE

Please follow the cleaning procedures provided below. These instructions are provided as a service. No warranty is implied since results may vary.

Ordinary dirt, smudges and water soluble stains can be removed with mild soap and water. If needed for difficult stains, clean by using commonly used, diluted, non-abrasive solutions such as quaternary ammonia compounds, ammonia enzyme cleaners, bleach or alcohol solutions.

The plastic bins may be cleaned in a dishwasher. However, they are **NOT** safe for use in an autoclave.

Do not use liquid spray or other liquids to clean the touchscreen. Liquids may damage the touchscreen and other electronics inside the device.

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Cleaning and Maintenance Notes:

- It is recommended that any cleaning solution be tested on a small, inconspicuous area to ensure surface is not harmed.
- Do not allow fluids to enter the interior of the device, particularly through the access panel. Fluids entering the device may damage the electronics.
- Never use steel wool or other abrasive materials that will damage the surface finish.
- Do not use strong solvents such as trichloroethylene and acetone. These solvents will damage the surface finish.
- Do not use powdered abrasives or other harsh cleansers like hypochlorite bleach, hydrogen peroxide, nitric or hydrochloric acids, or lye; they may deface the surface and change the finish color.
- Do not use any cleaners containing any type of abrasive such as "Soft Scrub", "Ajax" or "Comet".
- When using any cleaning product always read and follow the manufacturer's directions carefully.

TROUBLESHOOTING

Device will not power on

If it appears that the cart does not have power, try the following remedies:

- Press anywhere on the touchscreen to ensure that the cart is not powered. The display on the cart automatically turns off after a period of disuse. Touching the screen will restore the display.

Check that the cart is on. The user interface should show the far left LED light lit green. If it is not lit, hold power button for 2 seconds and cart will power on and tablet will boot up.

Drawers will not lock

If the drawers will not lock, the mechanical override for the drawers may be engaged. Ensure that the mechanical override for drawers is disengaged. Once open, check behind bin for items that may be stuck in drawer.

Cart does not display correct time

If the cart does not display the correct date or time, it may not have a network connection or the wrong time zone is selected. Ensure the cart has a network connection and that the correct time zone is selected. Alternatively, the time may be set manually. See "Device Settings" on page 30 for more information.

ACCESSING THE PCB

There are 6 modules, one for each drawer. Each module is labeled according to the default name of the drawers (L1, L2, L3, R1, R2, R3).
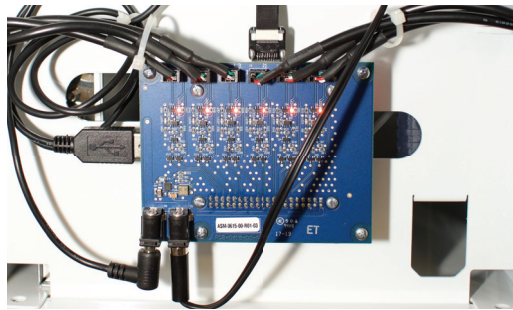
There are 2 LED's for each drawer module. One LED is orange and the other is blue. The orange LED indicates that the drawer lock is in the closed position. The orange light turns off when the lock is opened. Note that the LED is on if there is no connection to the lock. The blue LED turns on when the lock is being powered to open.

ACCESSING THE RFID BADGE READER

The RFID badge reader is locate underneath the worksurface. Remove the plate to access the badge reader.

OTHER MANUALS AND SOFTWARE

Please visit us at: **www.altus-inc.com/manuals** to download all operating and user manuals and to access the central management software.

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