

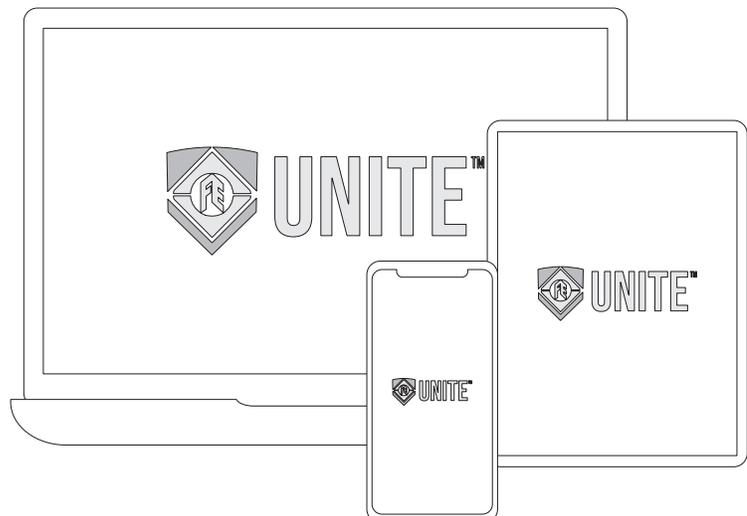


UNITE™ ASSET MANAGEMENT DATABASE

USER REFERENCE GUIDE

10000011818 r1

MODEL NUMBER
UNITE-1



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CONVENTIONS USED IN THIS MANUAL

This document includes safety precautions and other important information presented in the following format:

NOTE: This provides helpful supplementary information.

IMPORTANT: This provides important supplementary information and instructions to avoid damaging hardware or a potential hazard.

▲ CAUTION: This indicates a potentially hazardous situation that could result in minor or moderate injury if not avoided. This may also be used to alert against unsafe practices.

▲ WARNING: This indicates a potentially hazardous situation that could result in severe injury or death if not avoided.

▲ DANGER: This indicates an imminently hazardous situation that will result in death if not avoided.

OPERATING PRECAUTIONS

▲ WARNING: Important safety instructions. Before installing any Franklin Electric equipment, read this document and follow safety and operating instructions. Save these instructions.

▲ WARNING: Do not disassemble any equipment; contact Franklin Electric when a repair is required. Incorrect reassembly may result in a risk of electric shock or fire.

▲ WARNING: To avoid electric shock, abide by your company's safety practices and the following guidelines:

▲ WARNING: Before working with electricity, remove personal metal items such as rings, bracelets, necklaces, watches, etc. A short-circuit current can be high enough to weld such items, causing a severe burn.

▲ WARNING: Service work may only be performed by authorized personnel for procedures which they have satisfactorily been trained to execute.

▲ WARNING: To avoid a risk of serious injury or death, DO NOT come into contact with ANY source of live, electric current.

▲ WARNING: Avoid simultaneous contact with live conductors and enclosures, racks, or hardware that may be grounded.

▲ WARNING: Refer to NFPA 70E for electrical safety guidelines and requirements including (but not limited to) use of Personal Protection Equipment (PPE). Examples include (but not limited to) electrical-insulating clothing/footwear and electrical-insulating rescue hooks (equipment).

▲ WARNING: Always wear safety glasses with side shields.

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1 Introduction

UNITE™ is a sophisticated IoT asset management database that features advanced data visualization tools for Franklin Electric handheld battery testers (CAD), battery monitoring systems (BMS) and distribution transformer monitors (DTM). UNITE™ combines all of your CAD, BMS and DTM data into one consolidated network view, providing centralized data storage for an entire network of battery plants, enabling remote analysis and reporting from a centralized location.

1.1 Documentation

- This document is intended for qualified persons.
- Instructions of this document are in English. All other language versions are translations of this original document.
- Information/illustrations in this document are given as a guide for instruction and description purposes only. It is the user's responsibility to ensure that proper procedures are followed at all times.
- This document and related documents (Section 7.2) are available from Franklin Electric at www.franklingrid.com.

1.1.1 Symbol Legend



Refer to instruction guide.



Lockout/Tagout Electrical Equipment.



General Warning



Warning: Electricity



No open flame; Fire, open ignition source and smoking prohibited

2 Safety/Security

2.1 General Safety Information

- Only perform procedures in this document that you are qualified and certified to perform.
- Personnel working on or with energized equipment must be authorized by relevant regulatory bodies to carry out such work and must have the appropriate training. Check with your employer and relevant regulatory body's rules for working with energized equipment.
- Obey all local laws, rules, regulations, and instructions in this document. In case of inconsistency or contradiction between information contained in this document and any laws, rules and regulations, obey the stricter of the two.
- Keep unqualified personnel at a safe distance during installation.
- Always wear all required PPE on-site and during installation.
- If it is necessary to remove safety/security devices, immediately reinstall the safety/security devices after completing the work.

2.2 Cyber Security

This product is designed to be connected to and to communicate information and data via a network interface. It is solely the owner's responsibility to provide and continuously ensure a secure connection between the product and Owner's network or any other network (as the case may be).

The Owner shall establish and maintain any appropriate measures (such as but not limited to the installation of firewalls, application of authentication measures, encryption of data, installation of anti-virus programs, etc) to protect the product, the network, its system and the interface against any kind of security breaches, unauthorized access, interference, intrusion, leakage and/or theft of data or information.

The manufacturer Franklin Electric and its affiliates are not liable for damages and/or losses related to such security breaches, any unauthorized access, interference, intrusion, leakage and/or theft of data or information.

3 UNITE™ Database



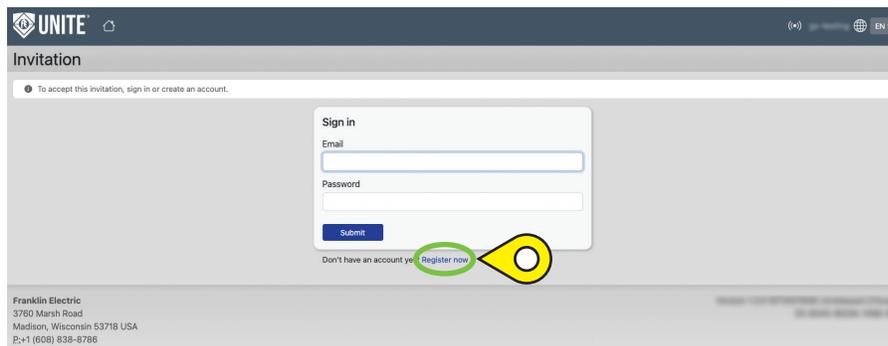
3.1 Registering New UNITE™ Accounts

Contact a Franklin Electric Sales or Customer Service Representative for subscription information to get started. Two types of accounts exist within UNITE™, Paid and Trial subscriptions. Both account types give access but the Trial subscription requires a trial activation code provided by Franklin Electric and will be deactivated after 90 days. Functionality in the Trial subscription is limited to one organization, one device, 100 plants (for CAD), and no additional users. The following sections outline each method for creating an account.

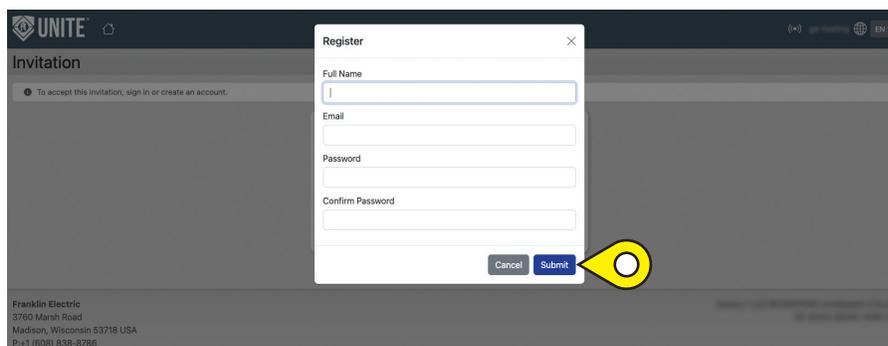
NOTE: Passwords require 12–36 characters including one each of the following alphanumeric characters: A-Z, a-z, 0-9, -_! &@?*+.(.)

3.1.1 Paid Subscription

1. An invitation with a web link will be sent by Franklin Electric Sales or Customer Service Representative.
 - Select the link.
2. Below the Sign In window is a hyperlink displaying the text “Register now” (📍).
 - Select the link.

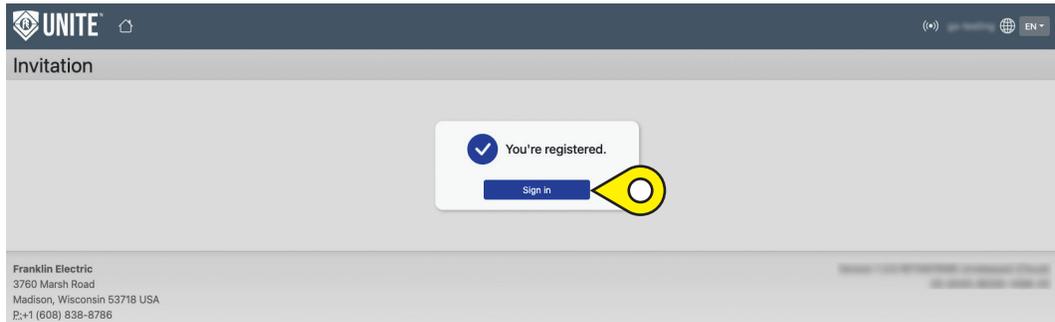


3. In the Register window, complete all input fields.
 - Select **SUBMIT**.

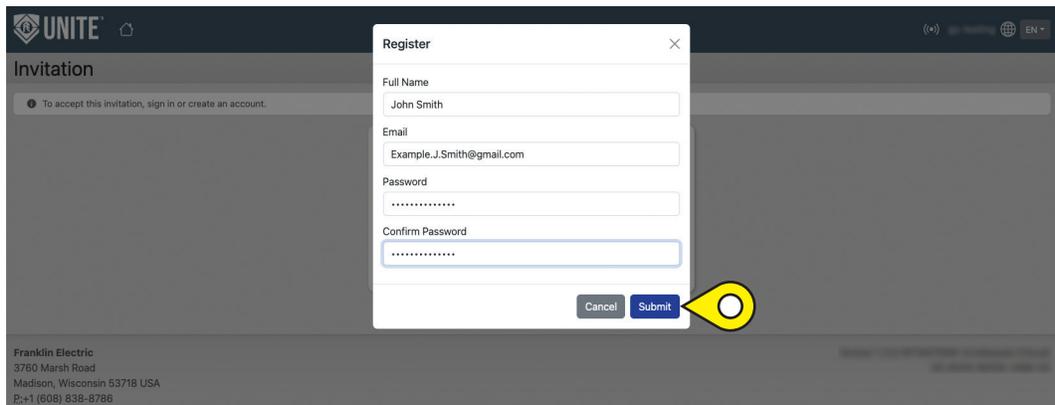


4. Upon successful completion of registration information, an Invitation window will be displayed indicating “You’re registered.”

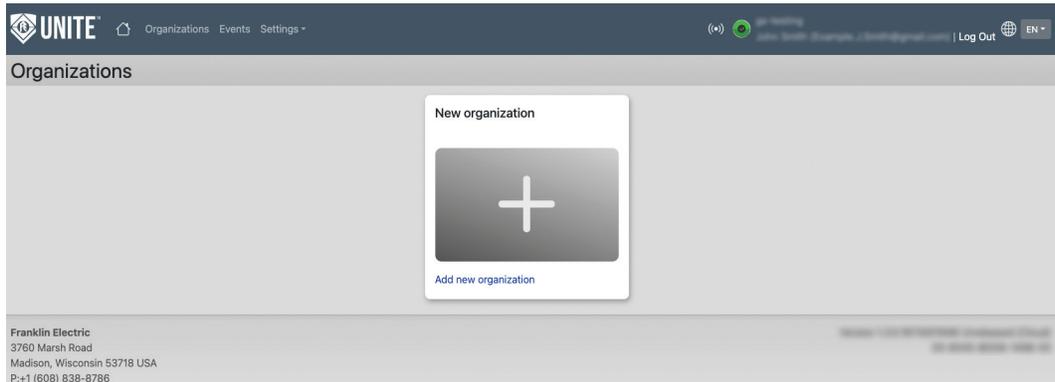
- Select **SIGN IN**.



5. Enter your login credentials and select **SUBMIT**.



- The web page next displayed is your UNITE™ Organizations page where Organizations may be created and managed.



NOTE: Subsequent sessions will be accessed from the main server login page (not an invitation link).

3.1.2 Trial Subscription

1. A Trial Code pamphlet is included with purchased equipment (CADD, BMS or DTM for example). *The sample code shown here is just for an example, your code will be similar.*

1X6T-ECZL-R1VX-6A57

2. Enter the following web address into a web browser.
 - unite1.franklingrid.com/activate-trial
3. Enter the Trial Code from Franklin Electric.
 - Select **CLAIM TRIAL**.

UNITE

Activate Trial

Trial Code

Claim Trial

Franklin Electric
3760 Marsh Road
Madison, Wisconsin 53718 USA
P: +1 (608) 838-8786

4. In the Activate Trial (Register) window, fill in all of the input fields.
 - Select **REGISTER ACCOUNT**.

UNITE

Activate Trial

Trial Code

1X6T-ECZL-R1VX-6A57 ✓

Change Trial Code

Full Name

Email

Password

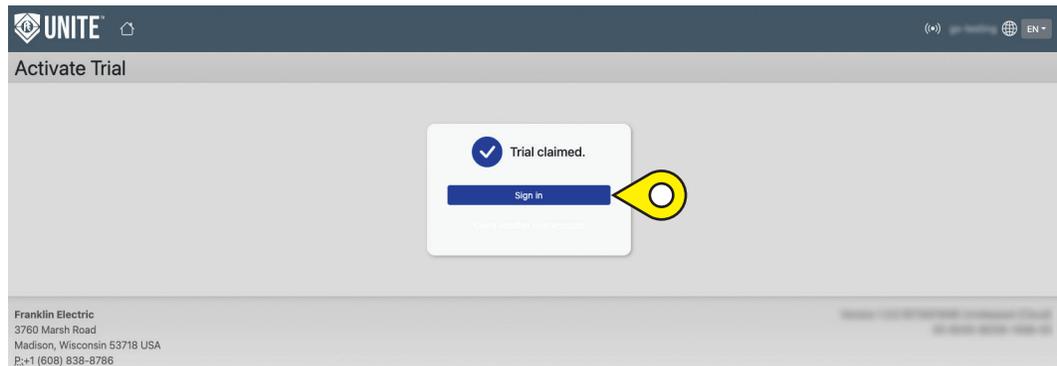
Confirm Password

Register Account

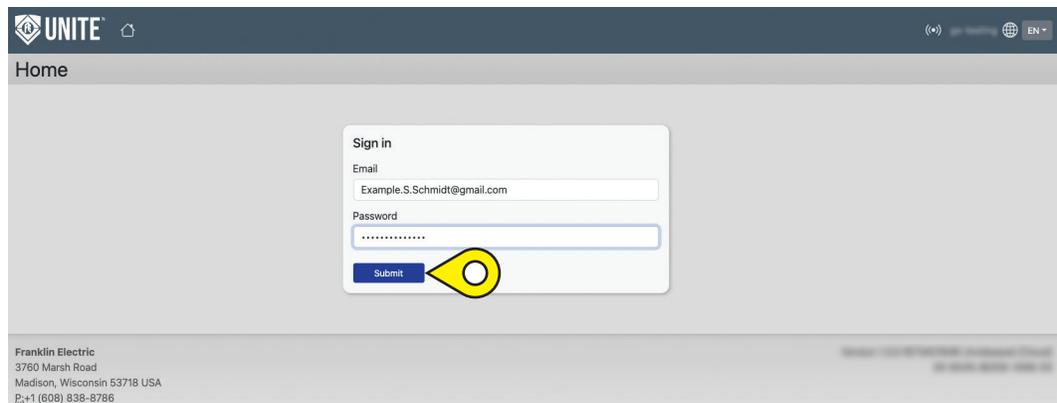
Franklin Electric
3760 Marsh Road
Madison, Wisconsin 53718 USA
P: +1 (608) 838-8786

5. Upon successful completion of registration information, an Invitation window will be displayed indicating “Trial claimed.”

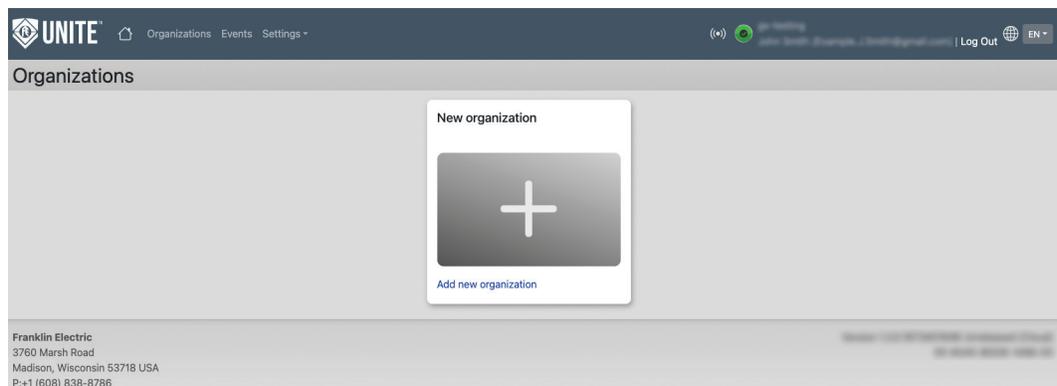
- Select **SIGN IN**.



6. Enter your login credentials and select **SUBMIT**.



- The web page next displayed is your UNITE™ Organizations home page where Organizations may be created and managed.



NOTE: Subsequent sessions will be accessed from the main server login page (not invitation link).

3.2 Overview

UNITE™ uses a hierarchy system referred to as Organizations which are created based on the product modules the Organization will use within UNITE™.

- BCU Monitoring – Use of a BCU (Base Coordinator Unit) is required under BCU Monitoring Organization.
- CAD Testing – Use of a CADD (CAD Digital handheld tester) is required under CAD Testing Organization.
- DTM Monitoring – Use of a DTM (Distribution Transformer Monitor) is required under DTM Monitoring Organization.

Organizations may be named (identified) (📍) for what ever area the device under an Organization will be located. For example:

- State or geographic region.
- Sales or commercial region.
- Section of a city or county.
- Section of buildings or campuses.

NOTE: The Description field (📍) provides an area to enter additional information for the Organization, further defining the Organization. This information will post at the bottom of the page when entering the Organization.

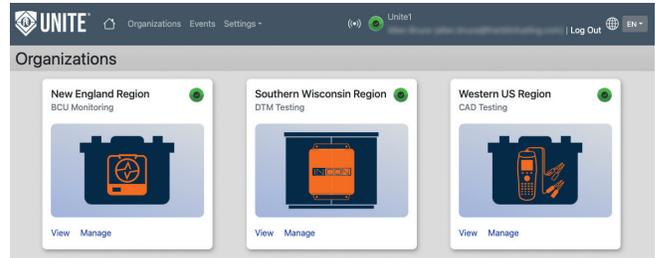
The screenshot shows the UNITE web interface. At the top, there is a navigation bar with the UNITE logo and links for 'Organizations', 'Events', and 'Settings'. Below this is a header for 'Manage Wisconsin Battery Plants'. A modal window titled 'Modify organization details' is open, showing a form with two fields: 'Name' (containing 'Wisconsin Battery Plants') and 'Description' (containing 'All Battery Plants located in the state of WI - USA'). A yellow location pin icon is next to the Name field, and a blue location pin icon is next to the Description field. Below the modal, there is a card for 'Wisconsin Battery Plants' with a BCU Monitoring icon and a 'View' button. Below the card, there are two location pin icons: a yellow one for 'Wisconsin Battery Plants' and a blue one for 'All Battery Plants located in the state of WI - USA'. The modal has 'Cancel' and 'Submit' buttons at the bottom right.

NOTE: Modification may be made to both the Name and the Description at any time after creation by hovering (📍) over the Name or Description on the Manage page.

This screenshot shows the same 'Manage Wisconsin Battery Plants' page. A hand cursor is hovering over a location pin icon next to the 'Wisconsin Battery Plants' entry. The location pin icon is orange with a white center. Below it, there is another location pin icon next to the 'All Battery Plants located in the state of WI - USA' entry. The navigation bar and header are the same as in the previous screenshot.

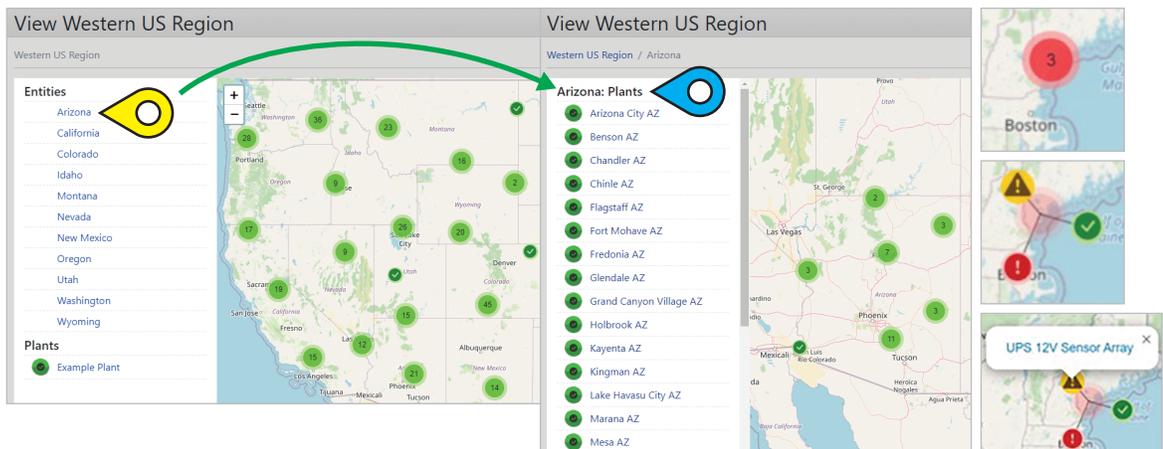
3.2.1 Organization View

- View all CELLGUARD™ Wireless Battery Monitoring Systems, CELLTRON™ Advantage Digital Battery Testers, and INCON® DTM Distribution Transformer Monitor organizations.
- Status:
 - Green = Normal.
 - Yellow = Warning.
 - Red = Alarm.
- View a map of each Plant within the Organization.
- Manage each organization:
 - Add users.
 - Add monitoring hardware and tester devices.
 - Manage Battery Plant organizational structure.



3.2.2 Plant Map View

- View all Plants geographically in a map view.
- Click on each plant for direct access.
- Status:
 - Green = Normal.
 - Yellow = Warning.
 - Red = Alarm.
- Plants located closely are clustered, zoom in to display individual plants.
- Configured Entities (📍) may be selected from the list on the left of the display to display a map of devices only available under that Entity (📍).



3.2.3 Plant View

- The present status of all strings, devices, and batteries within a Plant can be viewed by selecting it from within the Map View.
- Status:
 - Green = Normal.
 - Yellow = Warning.
 - Red = Alarm.
- Warning or Alarm status provides a direct link to a list of events in the history.
- The following latest measurements are displayed:

BCU Only

- String (Voltage, Current & Ripple Current)
- ELS Strand (Input State, Alarm State)
- External Alarm Device (Alarm State)
- External Analog Device (Value)
- Ambient Temperatures Zone (Temperature)

BCU & CADD

- Battery Voltage, Temperature, Conductance, Strap Resistance, Conductance Temperature-Compensated Percentage (T-Comp)

String	Timestamp	Voltage	Current	Ripple Current
2V Sensors White Rack	Apr 6, 2023, 12:55:27 PM	54.010 V	0 A	0.60 A
8V Sensors White Rack	Apr 6, 2023, 2:51:19 PM	54.308 V	0 A	0.65 A

ELS Strand	Channel	Timestamp	Input Active	In Alarm
ELS Strand 1	1	Apr 6, 2023, 2:51:19 PM	False	False

External Alarm Device	Channel	Timestamp	In Alarm
External Alarm Device 1	2	Apr 6, 2023, 2:51:19 PM	False

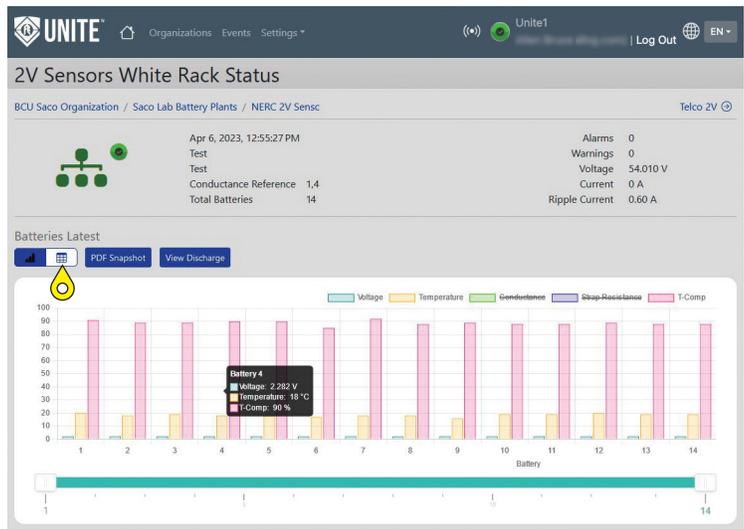
Temperature Zone	Connected Device	Channel	Timestamp	Temperature
Temperature Zone 1	VTC: String 1	A	Apr 6, 2023, 2:51:19 PM	22 °C
Temperature Zone 2	VTC: String 1	B	Apr 6, 2023, 2:51:19 PM	20 °C

Battery	Timestamp	Voltage	Temperature	Conductance	Strap Resistance	T-Comp
2V Sensors White Rack						
Battery 1	Apr 6, 2023, 12:31:00 PM	2.239 V	20 °C	1,275 S (1.460)	4 μΩ	91 %
Battery 2	Apr 6, 2023, 12:31:00 PM	2.298 V	18 °C	1,380 S (1.629)	98 μΩ	89 %
Battery 3	Apr 6, 2023, 12:31:01 PM	2.259 V	18 °C	1,299 S (1.524)	83 μΩ	89 %
Battery 4	Apr 6, 2023, 12:31:01 PM	2.282 V	18 °C	1,437 S (1.666)	113 μΩ	90 %
8V Sensors White Rack						
Battery 1	Apr 6, 2023, 12:31:01 PM	2.298 V	18 °C	1,392 S (1.629)	56 μΩ	90 %
Battery 2	Apr 6, 2023, 12:31:02 PM	2.258 V	17 °C	1,123 S (1.400)	314 μΩ	85 %
Battery 3	Apr 6, 2023, 12:31:02 PM	2.308 V	18 °C	1,435 S (1.640)	80 μΩ	92 %
Battery 4	Apr 6, 2023, 12:31:02 PM	2.238 V	19 °C	1,179 S (1.400)	320 μΩ	88 %

3.2.4 String View

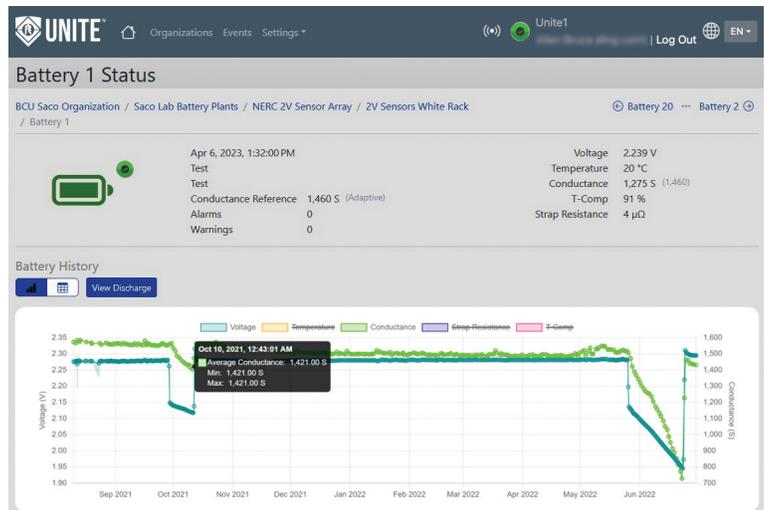
- The present status of a specific String can be viewed by selecting it from the list within the Plant.
- Status:
 - Green = Normal.
 - Yellow = Warning.
 - Red = Alarm.
- Warning or Alarm status provides a direct link to a list of events in the history.
- String Voltage, Current, & Ripple Current are viewable in the upper right corner (BCU only values) while Alarms, Warnings and Voltage are viewable for either BCU or CAD.
- Within a selected String Graph, a view of specific data can be turned on or off including:
 - Voltage, Temperature, Conductance, Strap Resistance, Conductance Temperature-Compensated Percentage (T-Comp).
 - Hover over any data point for a detailed view.
 - The range of batteries displayed in the graph can be changed by sliding the upper and lower limits to the left or right.

NOTE: Select the table icon (📄) to view data in a tabular format.



3.2.5 Battery View

- The present status of a specific Battery can be viewed by selecting it from the list within the String.
- Status:
 - Green = Normal.
 - Yellow = Warning.
 - Red = Alarm.
- Warning or Alarm status provides a direct link to a list of events in the history.
- Within a selected Battery Graph, a view of specific data can be turned on or off including:
 - Voltage, Temperature, Conductance, Strap Resistance, Conductance Temperature-Compensated Percentage (T-Comp).
 - Hover over any data point for a detailed view.

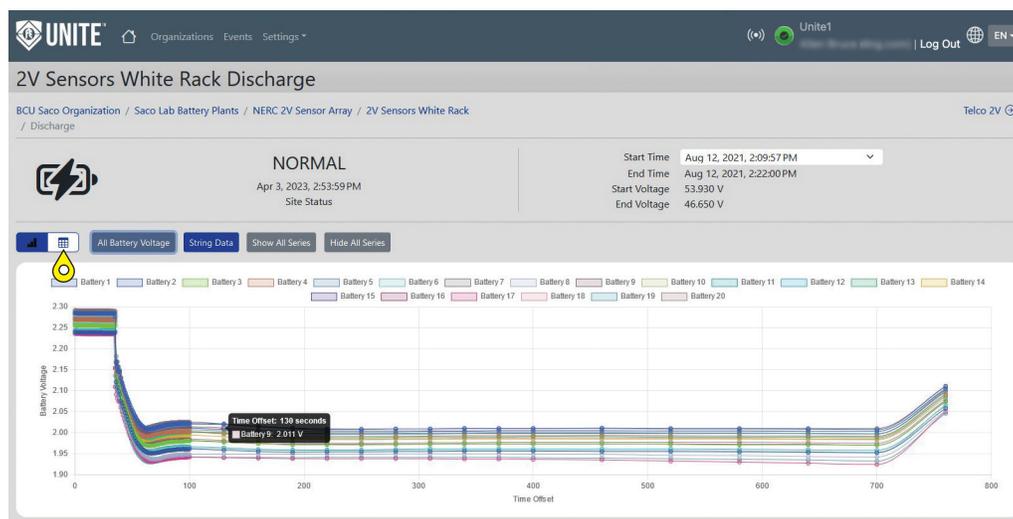
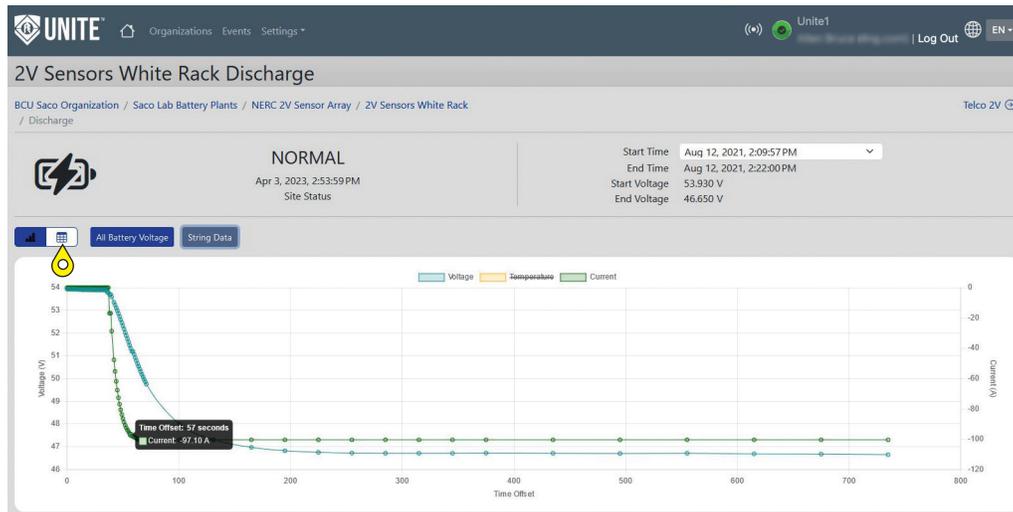


3.2.6 Discharge View

This view is a BCU page/function only.

- The details of a discharge can be viewed by clicking “View Discharge” within a String.
- Discharge status including start time, end time, start voltage, and end voltage can be viewed.
- Within the selected String Data Discharge Graph, the view of specific data can be turned on or off:
 - Voltage, Temperature, and Current.
 - Hover over any data point for a detailed view.
- All battery voltage within a discharge can be viewed graphically.
 - Each battery voltage can be turned on or off individually or as a group.
 - Hover over any data point for a detailed view.

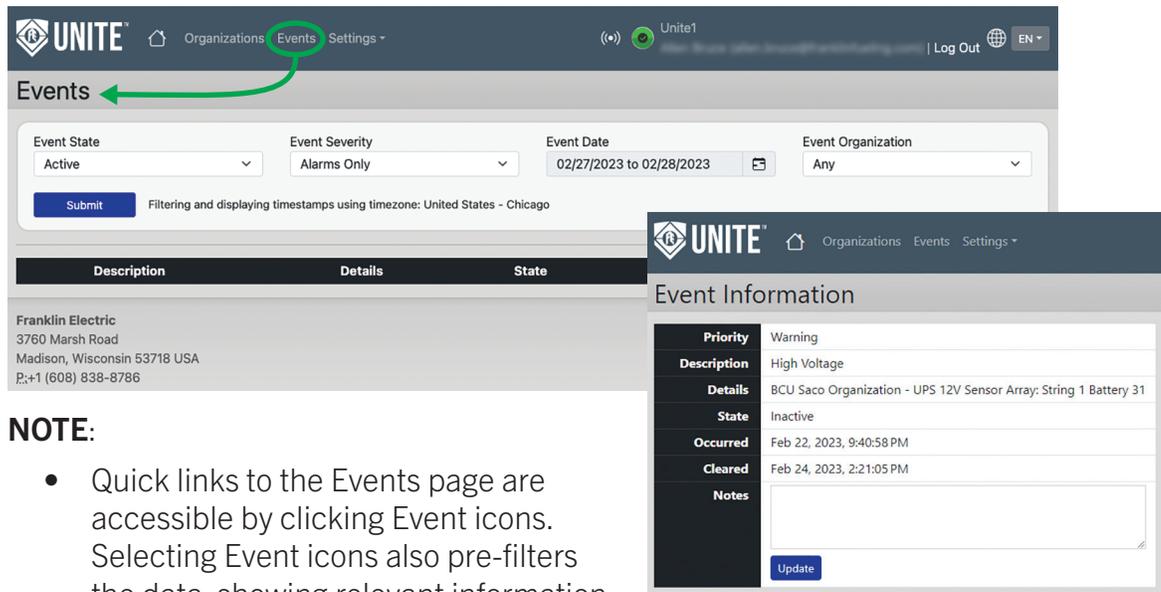
NOTE: Select the table icon (📄) to view data in a tabular format.



3.2.7 Events View

The Events page allows the user to filter Event occurrences based on the following Event characteristics:

- Event State
- Event Severity
- Event Date
- Event Organization (where active)



NOTE:

- Quick links to the Events page are accessible by clicking Event icons. Selecting Event icons also pre-filters the data, showing relevant information for the Event selected.
- Clicking on an Event will display an Event Information window. This window may display additional information and has a place to write /save notes to the Event.

3.2.7.1 Event Types

● = Normal ● = Warning ● = Alarm

Plant Level Event Types

- Plant Is In Charge Mode
- Plant Is In Discharge Mode
- Firmware Upgrade Required for UNITE™ Connection
- Plant Requires Validation

Temperature Zone Level Events

- Low Temperature Alarm
- High Temperature Alarm

ELS Strand Level Events

- ELS Strand Alarm

String Level Event Types

- Communication failure
- High Voltage
- Low Voltage
- High Current
- Low Current

External Alarm Device Level Events

- External Device Warning
- External Device Alarm

External Analog Device Level Events

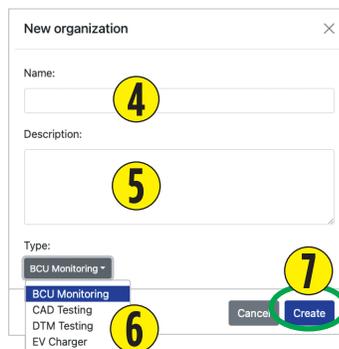
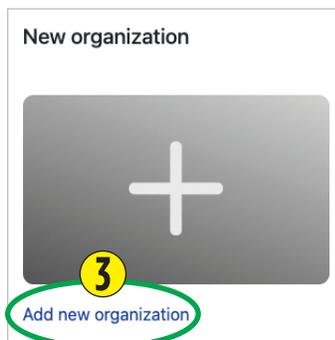
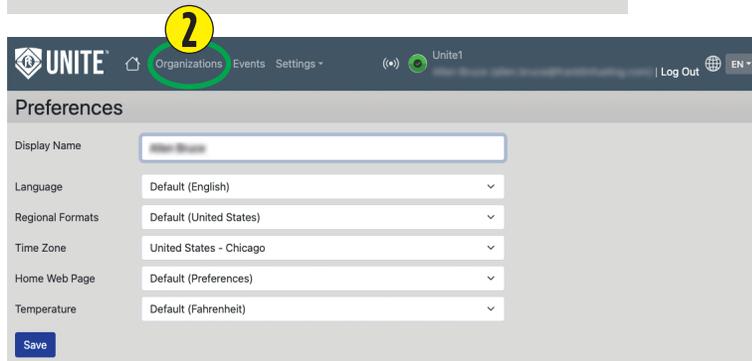
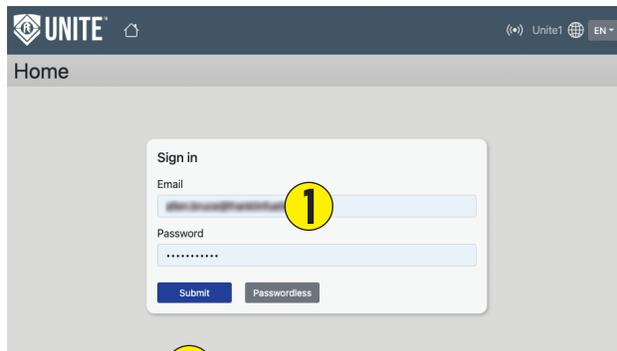
- External Analog Device High Warning
- External Analog Device High Alarm
- External Analog Device Low Warning
- External Analog Device Low Alarm

Battery Level Event Types

- Communication failure
- High Conductance
- Low Conductance
- High Resistance
- Low Resistance
- High Conductance %
- Low Conductance %
- High Temperature
- Low Temperature
- High Voltage
- Low Voltage

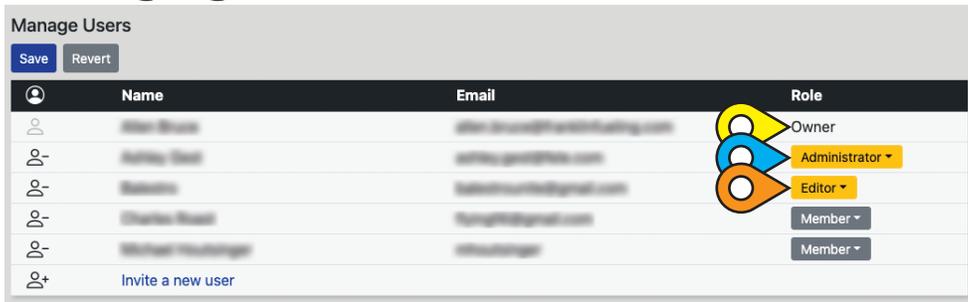
3.3 Creating Organizations in UNITE™

1. Login to UNITE™ with a registered email address and password at <https://unite1.franklingrid.com>.
2. Select **Organizations**.
3. Select **Add new organization**.
4. Name the Organization
(This can be a company name, region, district office, etc.)
5. Provide a description of the Organization.
(Battery Testing Data, location, quantity, date/time, for example).
6. Select a **Type** from the dropdown list.
7. Select **Create**.



NOTE: Once created, the Organization will list on the **Organizations** page. Each individual Organization may be accessed to **View** monitored devices or to **Manage** the Organization. Links to each are located at the bottom left corner (📍).

3.4 Managing Users



3.4.7.1 Owner

The Owner (📍) (creator) of the Organization has the following abilities:

- All function authority over the Organization.
- This role cannot be assigned to another user.
- This is the only role that may delete an Organization.
- This role is the only role that may assign another user the Administrator role.

3.4.7.2 Administrator

An organization Administrator (📍) can:

- Invite users.
- Add devices.
- Stage downloads.
- All functions available as editor.

NOTE: This role may assign other users the Editor role but may not assign the Administrator role.

NOTE: Added users, plants and devices count against the Owner’s total subscription.

3.4.7.3 Editor

An organization Editor (📍) can:

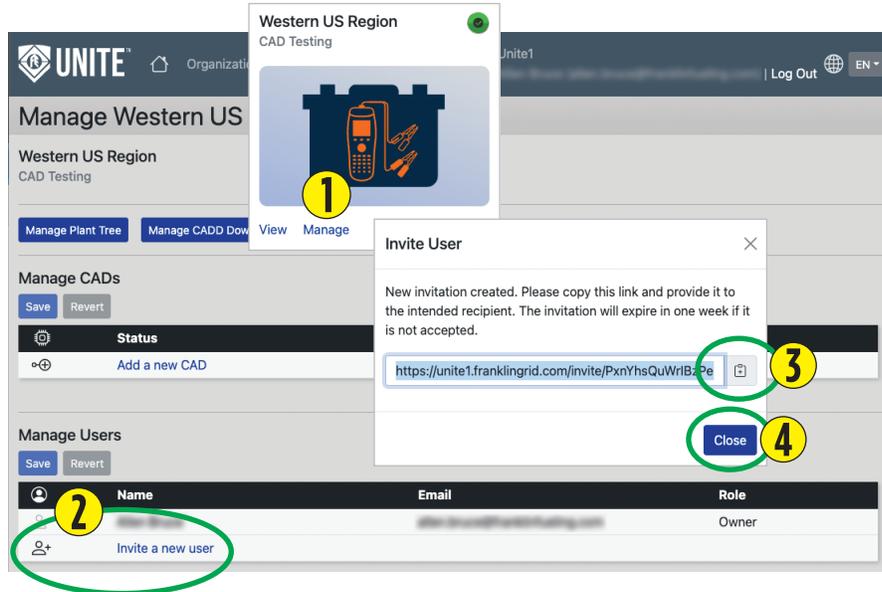
- Add/Delete/Edit devices and plants.
- Stage CADD (handheld tester) downloads.
- Manually upload CADD (handheld tester) data.

NOTE: This role is NOT able to add/edit users

NOTE: Devices and plants added/deleted by an Editor counts against the Owner’s total subscription.

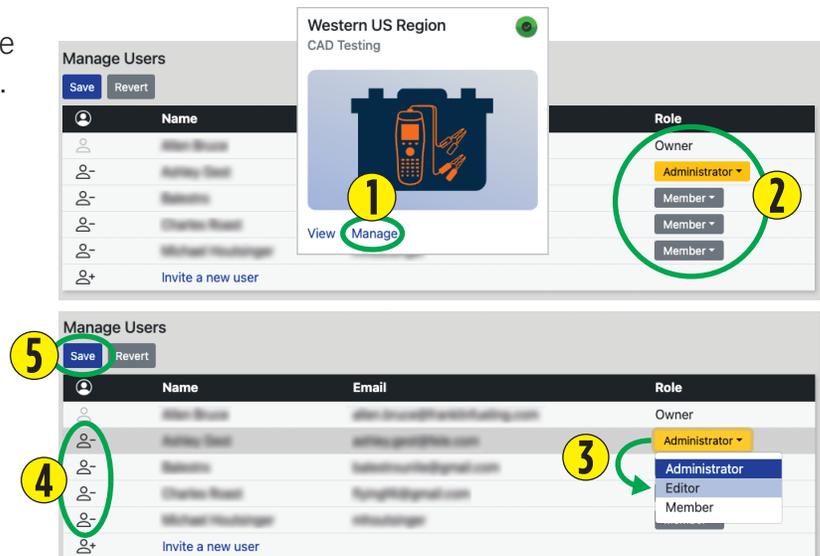
3.4.1 Adding Users

1. Go to the organization to edit, select **Manage**.
2. Select either the “Invite a new user” icon or hyperlink.
3. Copy the highlighted link.
4. Select **Close**.
5. Provide the copied link to the intended recipient.
(The invitation will expire in one week if it is not accepted.)



3.4.2 Editing / Removing Users

1. Go to the organization to edit, select **Manage**.
2. Select the dropdown menu of the User to edit (advance to Step 4 to remove a User).
3. Select the new Role for the User.
4. Select the icon corresponding to the User to be removed.
5. Select **Save**.



3.5 Adding Entities

An “Entity” is an optional hierarchy level containing a Site, a Plant, and a String for the purpose of organizing plants when an organization has many battery plants. Usage of Entities and Hierarchies is not required.

The screenshot illustrates the UNITE interface for managing entities. It shows a navigation menu with 'Manage Plant Tree' and 'Manage BCU Tree' buttons. A list of entities for the Western US Region is displayed, with an 'Add Entity' button at the bottom. A modal window titled 'New Entity' is open, showing a form with fields for Name, Type, and Description. The 'Type' dropdown is set to 'Folder', and a detailed view of the dropdown options is shown on the right.

NOTE: Once an Entity is created, users can drag/drop Plants into existing Entities or existing Entities into other Entities by selecting the node  icon next to the Plant to move.

- To remove a plant, Move node up one level.



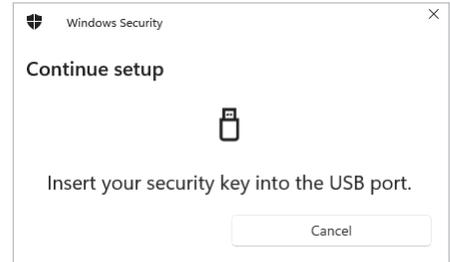
3.6 Settings

📍 The Preferences page is the location where users go when they first login. This page allows users to define language, region, time zone home page and temperature settings.

📍 The Password page provides user the capability of resetting password and password requirements. Passwords consist of 12-36 characters including one each of the following alphanumeric characters: A-Z, a-z, 0-9, -_! &@?*.()

📍 Multifactor Authentication lets users set a FIDO2 device as another level of authentication and enable passwordless authentication when logging into UNITE™.

- **Passwordless** authentication requires a FIDO2 device and a supporting web browser.
- A window will open to display a prompt indicating to insert a security key or configure biometric features supported by the device your web browser is running on.



Preferences

Display Name: [Text Field]

Language: Default (English)

Regional Formats: Default (United States)

Time Zone: Vanuatu

Home Web Page: Default (Preferences)

Temperature: Default (Fahrenheit)

Save

Settings -

- View Subscription
- Preferences
- Password
- Multi-Factor Authentication
- Date/Time

Password

12-36 characters including one of each: A-Z, a-z, 0-9, -_!&@?*.()

Set new password

Old password: [Text Field]

New password: [Text Field]

Repeat password: [Text Field]

Submit

Date/Time

Current Date/Time: Apr 4, 2023, 9:15:49 PM

Multi-Factor Authentication

Configure multi-factor authentication here. Multi-factor authentication increases the security of your account by adding a secondary authentication requirement when logging in. You may configure more than one authenticator.

Warning, no authenticators have been added to your account. Configure authenticators below.

Add Authenticator Enable passwordless login with this authenticator

Note: Passwordless requires a FIDO2 device and a supported web browser.

3.7 Reports

String 1 Status
 Jul 8, 2022, 12:11:41 PM
 ENERSYS
 12HX150E
 Conductance Reference 700 S (Adaptive)
 Total Batteries 40

Alarms 0
 Warnings 1
 Voltage 509,000 V
 Current 0 A
 Ripple Current 1.68 A

Batteries Latest
 PDF Snapshot View Discharge

Voltage Temperature Conductance SOC Resistance T-Cmp

Battery 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

PDF Snapshot

BATTERY STRING REPORT
 UNITE
 BATTERY STRING REPORT
 Last Updated: 7/8/2022 12:11:41 PM
 Site/Plant: ENERSYS 12HX150E
 Report Name: ENERSYS 12HX150E
 Number of Strings: 1

String

String Name	String ID	String Type	String Voltage	String Current	String Power	String Energy	String Capacity	String Status
ENERSYS 12HX150E	1	String	509.000 V	0.000 A	0.000 W	0.000 kWh	0.000 kWh	OK

Batteries

Battery	Manufacturer	Model	Type	Initial Voltage	Current Voltage	Temperature	Date of Manufacture
Battery 1	Yes	Yes	Custom	2.950	2.950		
Battery 2	Yes	Yes	Custom	2.950	2.950		
Battery 3	Yes	Yes	Custom	2.950	2.950		
Battery 4	Yes	Yes	Custom	2.950	2.950		
Battery 5	Yes	Yes	Custom	2.950	2.950		
Battery 6	Yes	Yes	Custom	2.950	2.950		
Battery 7	Yes	Yes	Custom	2.950	2.950		
Battery 8	Yes	Yes	Custom	2.950	2.950		
Battery 9	Yes	Yes	Custom	2.950	2.950		
Battery 10	Yes	Yes	Custom	2.950	2.950		
Battery 11	Yes	Yes	Custom	2.950	2.950		
Battery 12	Yes	Yes	Custom	2.950	2.950		
Battery 13	Yes	Yes	Custom	2.950	2.950		
Battery 14	Yes	Yes	Custom	2.950	2.950		
Battery 15	Yes	Yes	Custom	2.950	2.950		
Battery 16	Yes	Yes	Custom	2.950	2.950		
Battery 17	Yes	Yes	Custom	2.950	2.950		
Battery 18	Yes	Yes	Custom	2.950	2.950		
Battery 19	Yes	Yes	Custom	2.950	2.950		
Battery 20	Yes	Yes	Custom	2.950	2.950		

3.7.1 PDF Snapshot String Report

- String overview in both table and graph format.
- Includes battery reference information and thresholds.

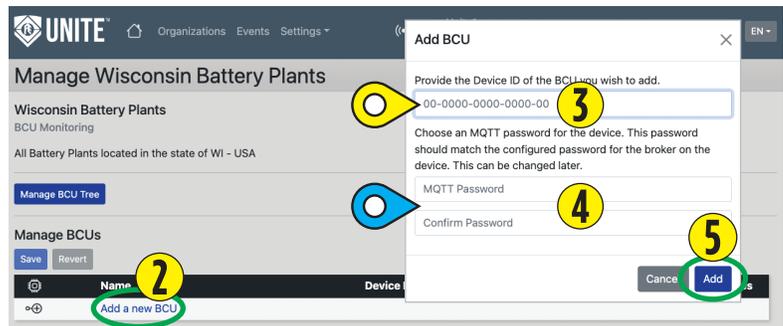
4 BCU (Monitoring) Organizations

The Base Coordinator Unit (BCU) is the *controller* component of the CELLGUARD™ Battery Monitoring System (BMS) managing battery sensor test activities, collecting test data, and communicating with the CONVERGE™ web interface to save data in the UNITE™ database.

4.1 Managing BCU Organizations

4.1.1 Adding a BCU to an Organization

1. Select Manage.
2. Select Add a new BCU.
3. Enter the ID (📍) from the page bottom in CONVERGE™ for the BCU to add.
4. Enter the same MQTT password (📍) used for the BCU to add (editable later).
5. Select Add.



Name	Device	Version					
Battery 23	Mar 24, 2022, 10:11:30 AM	Mar 23, 2022, 11:14:38 AM	2,245	68	1,636 (1,895)	89	236
Battery 24	Mar 24, 2022, 10:11:30 AM	Mar 23, 2022, 11:14:44 AM	2,245	68	1,633 (1,863)	91	213

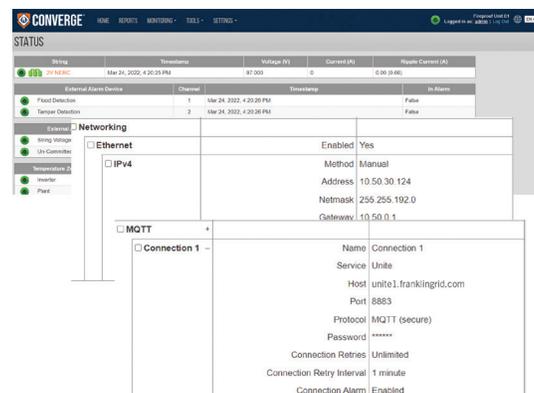
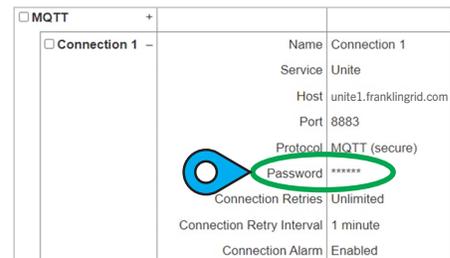
Franklin Electric Grid Solutions
3760 Marsh Road
Madison, Wisconsin 53718 USA
E: +1 (608) 838-8786

Version 1.0.0
00-B827-EB0A-C080-00

NOTE: BCUs must have CONVERGE™ firmware loaded to communicate with UNITE™.

Additional requirements include:

- Ethernet IP address with an internet path.
- MQTT section of Configuration completed with service set to UNITE™.
 - Default PORT-8883.
 - HOST for FE UNITE™ is: unite1.franklingrid.com
- Device time must be set correctly and configuring an NTP server (on the BCU) is recommended for a stable connection.
- DNS server address entered.



4.1.2 Editing a BCU Plant

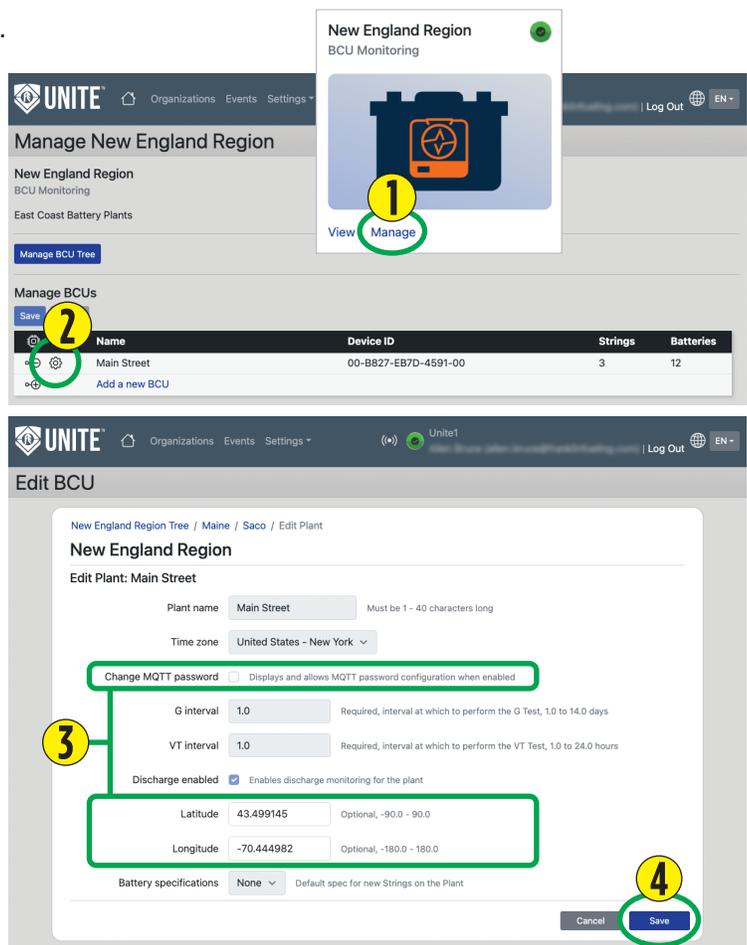
On the BCU Organization containing the Plant to edit,

1. Select **Manage**.
2. Select the gear  symbol.
3. Edit fields as needed.
 - Change MQTT Password (fields for editing MQTT Password).
NOTE: Change to password here will need to be updated in the BCU device configuration or communication will be lost.
 - Longitude and Latitude – Used to place plant location on map (optional).
4. Select **Save** when finished.

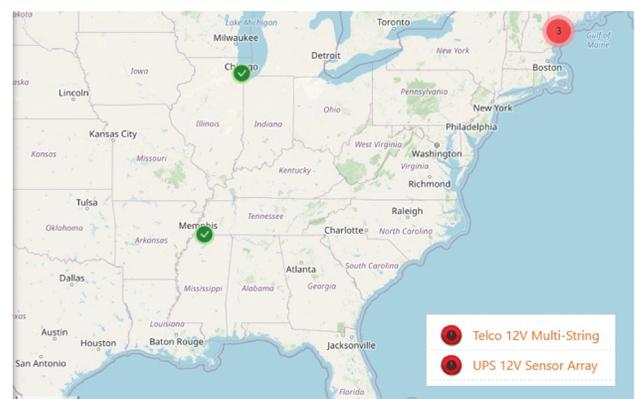
Read-Only Fields*

- Plant Name.
- Time Zone.
- G-Interval – time in days UNITE™ will poll for conductance readings.
- VT Interval time in hours UNITE™ will poll for voltage and temperature readings.
- Discharge Enable – checked indicates discharge monitoring is enabled for the Plant (provided you have a VTC commissioned to the BCU).
- Battery specification – Default specification for new Strings on the Plant.

NOTE: *To adjust read-only settings, edit the fields in the configuration of the BCU.

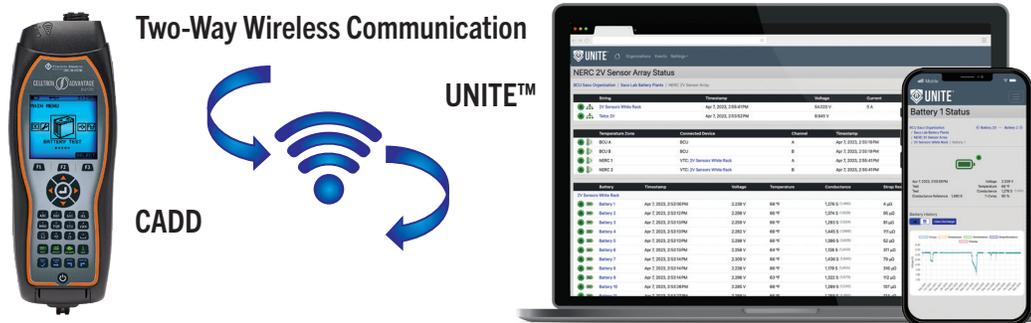


The screenshot shows the UNITE web interface. At the top, there's a navigation bar with 'UNITE' logo and 'Organizations Events Settings'. The main heading is 'Manage New England Region'. Below it, there's a 'New England Region BCU Monitoring' section with a 'Manage BCU Tree' button. A callout box with a '1' points to the 'Manage' button. Below that, there's a 'Manage BCUs' section with a 'Save' button and a table of BCU plants. A callout box with a '2' points to the gear icon for 'Main Street'. Below that, there's an 'Edit BCU' form for 'Main Street'. The form has fields for 'Plant name', 'Time zone', 'Change MQTT password', 'G interval', 'VT interval', 'Discharge enabled', 'Latitude', 'Longitude', and 'Battery specifications'. Callouts '3' and '4' point to the 'Change MQTT password' checkbox and the 'Save' button respectively. Below the form is a map of the United States with a red '3' on the map.



5 CAD (Testing) Organizations

5.1 CADD (Tester) Overview



The CELLTRON™ Advantage Digital (CADD) is a fast, user-friendly, premium handheld tester for measuring battery conductance, voltage, temperature and strap resistance in high-noise environments for a complete battery state-of-health analysis. This highly reliable tester allows users to upload data wirelessly to the web-based UNITE™ database for centralized data storage, proactive maintenance planning, and compliance reporting.

5.2 Create Wi-Fi Profiles (CADD to UNITE™ Link)

IMPORTANT: Do not include “http(s)://” when you enter your web address.

NOTE: The CADD supports unsecured, WPA/WPA2, and WEP networks.

NOTE: The CADD does not support enterprise Wi-Fi where usernames are required.

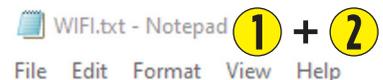
1. Create a text file in NOTEPAD with your Wi-Fi connection information.
2. Save the file as WIFI.txt
3. Copy .txt file to a USB flash drive.
4. Insert the flash drive in the USB A port (data storage/transfer).

Required Information

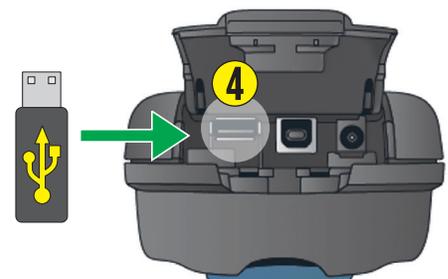
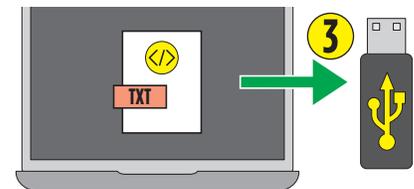
WiFi connection name (SSID):

Password:

UNITE™ Web Address:



iPhone
iodshrfwf0rje
unite1.franklingrid.com



5.2.1 Wi-Fi Profile Setup on the CADD



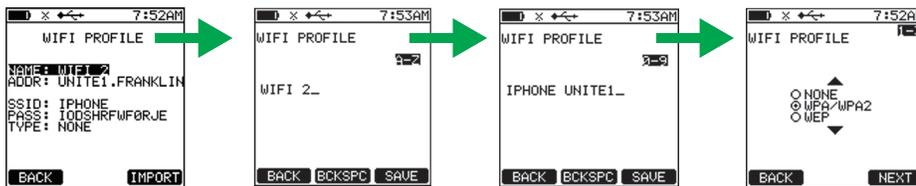
From the Main Menu navigate to the WiFi Icon. Press F3 to SELECT.

Navigate to the WiFi Profile icon. Press F3 to SELECT.

Use the navigation arrows to highlight the WiFi Profile you want to setup. Press F2 to EDIT.

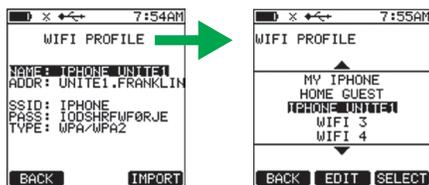
With the USB flash drive inserted in the CADD port, Press F3 to IMPORT the WiFi profile you created.

With the USB flash drive inserted in the CADD port, Press F3 to confirm IMPORT.



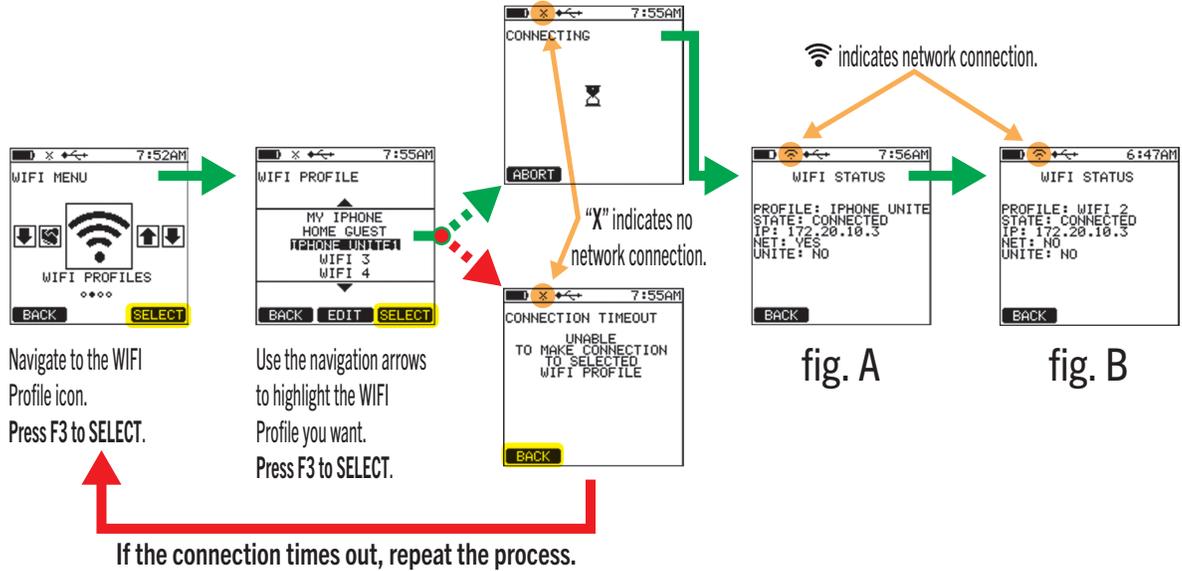
After import, if required, edit the profile name and match security TYPE. **NONE** (no password) for an unsecured network or **WPA/WPA2** for a secured network. To edit these fields, highlight the item and press enter on the selected setting. Press the Main Menu key when finished.

NOTE: To use an unsecured network, the password line in the Wi-Fi profile loaded into the CADD must have the word "NONE" instead of a password or profile will not work (do not leave blank).



WIFI 2 is now my IPHONE UNITE1 Profile.

5.2.2 Connect to a Wi-Fi network with the CADD

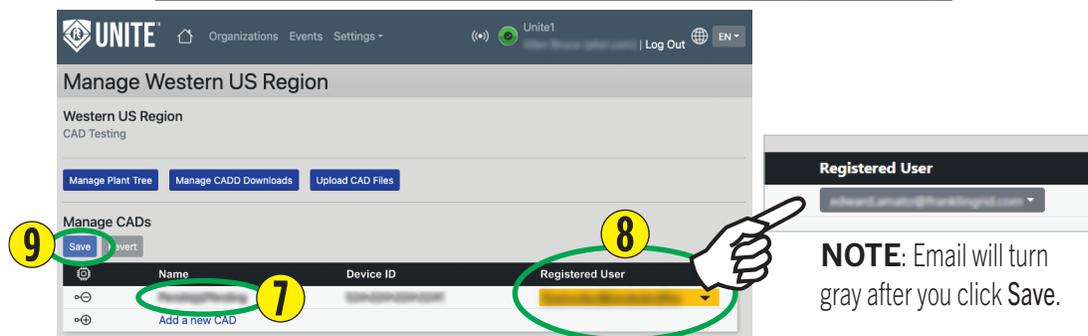
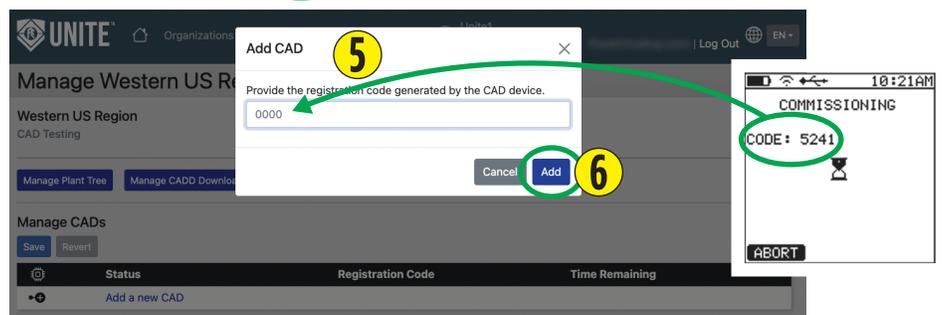
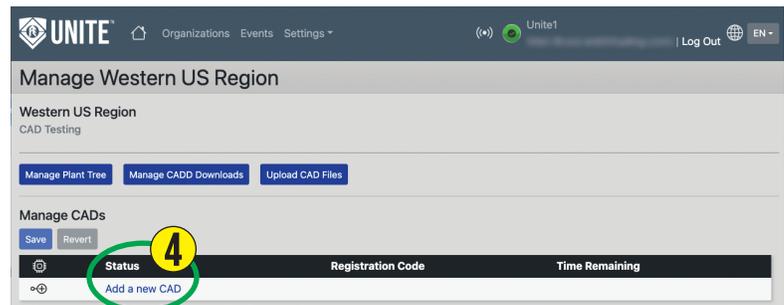
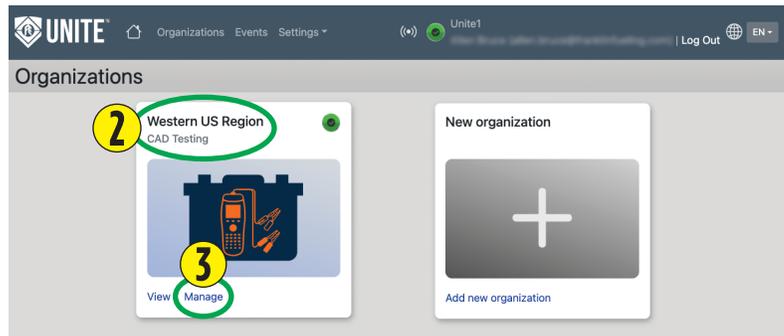
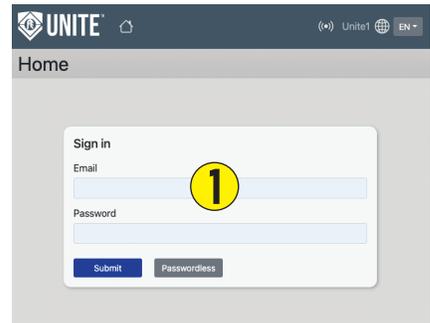


NOTE: The first time connecting to a Wi-Fi profile **and** if the tester is connected to the Wi-Fi network in your selected profile, you will see an IP address, NET will be YES, and UNITE™ will be NO (fig. A).

NOTE: If the device obtains and displays an IP address, but NET is NO and UNITE is NO (fig. B), the tester is connected to the Wi-Fi router, but you may have entered something incorrectly in the profile or have a problem with the network.

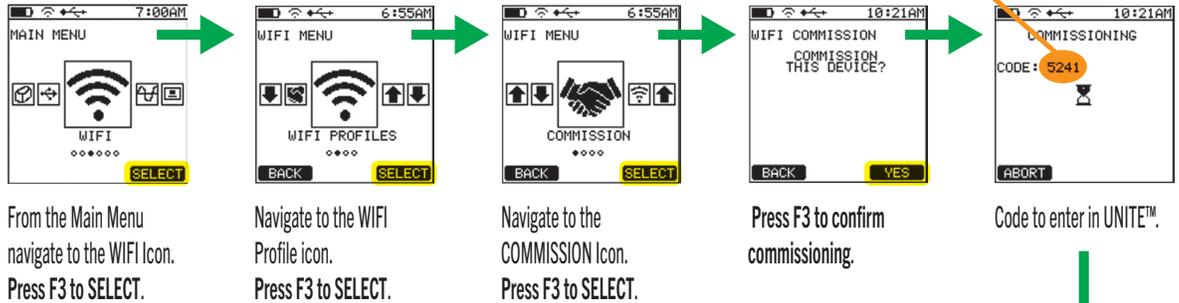
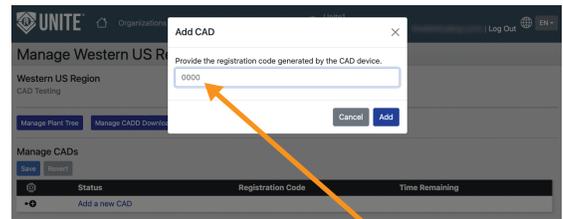
5.3 Adding a CADD to a CAD Organization in UNITE™

1. Login to UNITE™ with an email address and password at <https://unite1.franklingrid.com>.
2. Choose or create the Testing Organization to associate the CADD with.
3. Select **Manage**.
4. Select **Add a new CADD**.
5. Enter the **four-digit code** from the CADD. (See reference graphic **a** (next page) for additional information.)
6. Select **Add**.
7. Name the CADD and press **Enter**.
8. Assign a **Registered User's** email from the dropdown list to the CADD.
9. Select **Save**.



NOTE: Email will turn gray after you click Save.

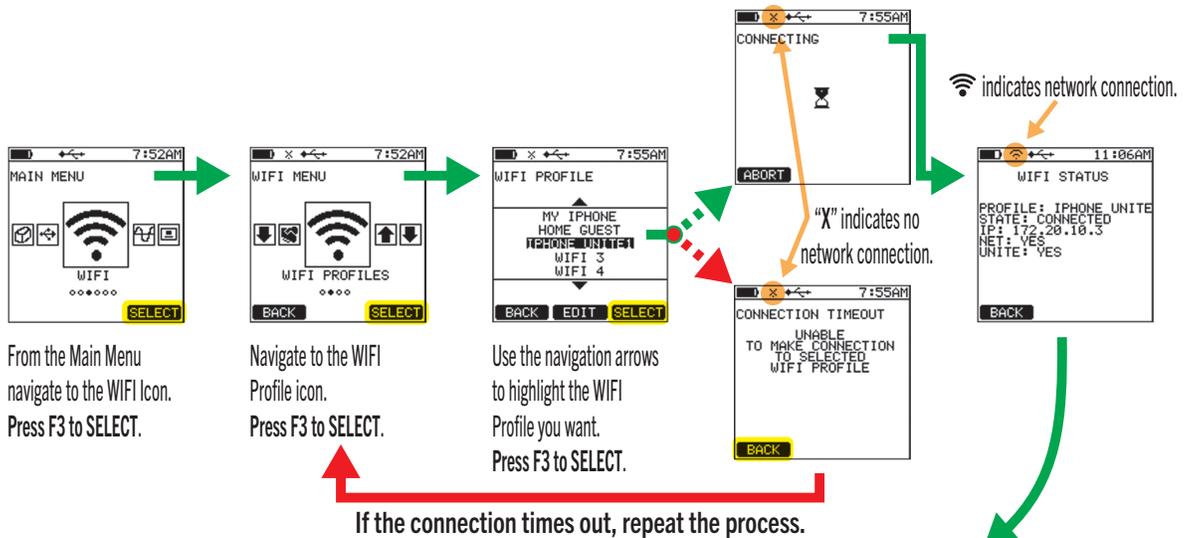
NOTE: The code will be a unique four-digit code for each CADD and CADD attempt. *5241 is just an example.*



CADD screen will display the device is commissioned.

NOTE: RESET if tester is already commissioned to another Organization.

5.3.1 Verify the CADD is Connected to UNITE™

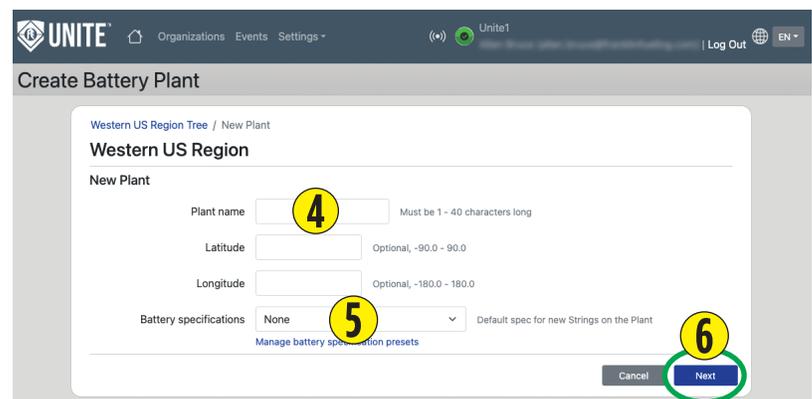
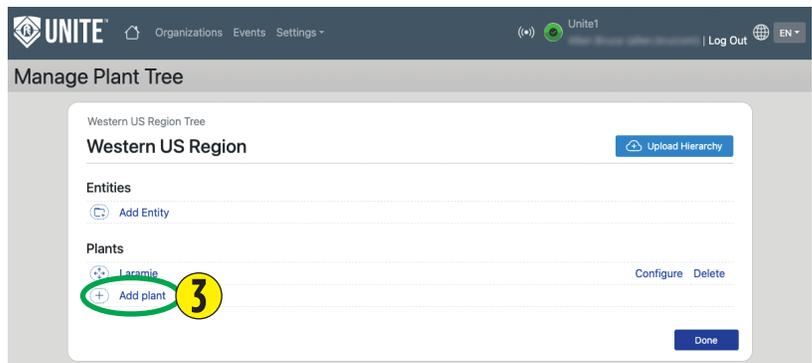
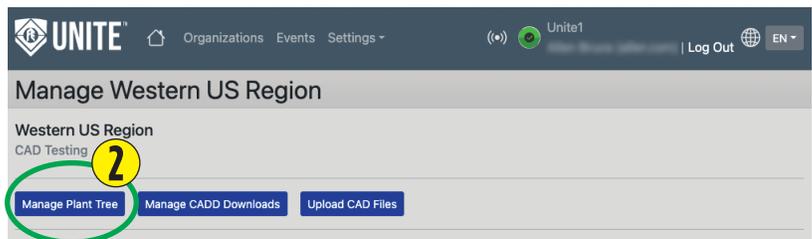
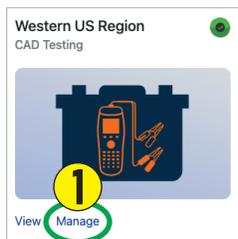


NOTE: The "NET" listing of YES or NO indicates if the device can access the UNITE™ server.

NOTE: The "UNITE™" listing of YES or NO indicates if the device is commissioned to the UNITE™ server it is attempting communication with.

5.4 Creating a Plant in UNITE™

1. Select **Manage**.
2. Select **Manage Plant Tree**.
3. Select **Add Plant**.
4. Name the **Plant**.
5. Select a ***Battery specification**.
 - If creating a new battery specification, see § 5.4.1.
 - Use “None” if the strings in the plant have different specifications and they can be subsequently set at the string level.
6. After entering the required information, select **Next**.



NOTE: Latitude and longitude coordinates are *optional*. Enter coordinates for a map view of your Plants.

5.4.1 Creating a Battery Specification

1. Select **Create** and apply a new specification.
2. Select **Battery type** from menu.
3. Enter the following battery information:
 - Manufacturer **NAME**.
 - Model **NAME/NUMBER**.
 - Conductance reference **BASELINE VALUE**.
 - Voltage reference **NOMINAL BATTERY/CELL VOLTAGE**.
4. Select **Add Preset** when done.
5. Select **Save** when finished.

UNITE Organizations Events Settings - Unite1 | Log Out EN

Create Battery Plant

Western US Region Tree / New Plant

Western US Region

New Plant

Plant name Must be 1 - 40 characters long

Latitude Optional, -90.0 - 90.0

Longitude Optional, -180.0 - 180.0

Battery specifications None Create and apply a new specification ACME / 7 Default spec for new Strings on the Plant

Cancel **Next**

UNITE Organizations Events Settings - Unite1 | Log Out EN

New Battery Spec Preset

Western US Region Tree / New Battery Spec Preset

Western US Region

New Battery Spec Preset

Battery type Custom VLA - Flooded/Wet VLA - Lead Calcium VLA - Lead Antimony VRLA - Sealed Ni-Cd Lithium

Manufacturer Must be 1 - 64 characters long

Model Must be 1 - 64 characters long

Conductance reference 10 - 20,000 S

Voltage reference 1 - 15 V

Cancel **Add Preset**

UNITE Organizations Events Settings - Unite1 | Log Out EN

New Battery Spec Preset

Western US Region Tree / New Battery Spec Preset

Western US Region

New Battery Spec Preset

Battery type VRLA - Sealed

Manufacturer Must be 1 - 64 characters long

Model Must be 1 - 64 characters long

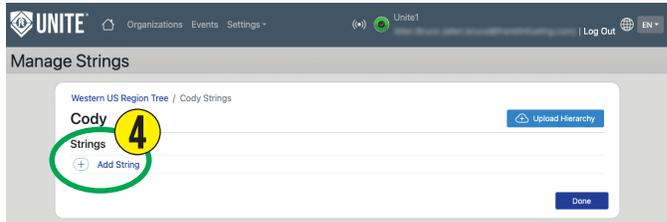
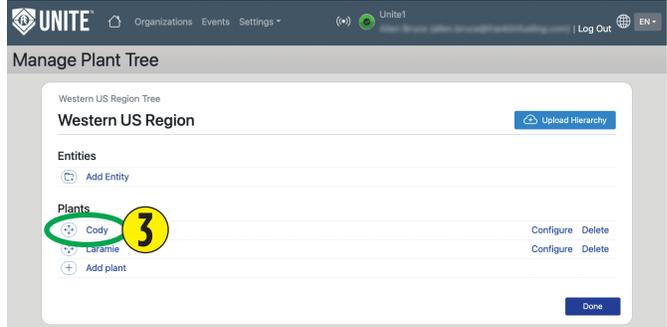
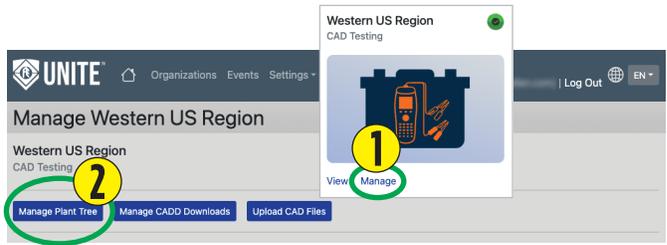
Conductance reference 10 - 20,000 S

Voltage reference 1 - 15 V

Cancel **Add Preset**

5.4.2 Creating a Battery String

1. Select **Manage**.
2. Select **Manage Plant Tree**.
3. Select the **Plant** where the new String will reside.
4. Select **Add String**.
5. Enter the following information:
 - Name the Battery String.
 - Installation Date and Warranty Date are optional fields.
 - Select a Battery Specification from the list or create a new battery specification for the String.
6. Set **Alarm and Warning thresholds**.*
7. Select **Save** when finished.



***NOTE:** To see battery alarms and warnings, select the desired battery parameters and set the Alarm and Warning thresholds for each parameter selected.



5.4.3 Adding Batteries to a String

1. Select **Manage**.
2. Select **Manage Plant Tree**.
3. Select the **Plant** containing the String to which batteries are to be added.
4. Select the **String** to which batteries are to be added.
5. Select **Add Battery**.
6. Enter information (optional).

NOTE: Battery specifications will by default be set to the specification the String was set to (in most cases this will not change).
7. Select **Save** when finished.

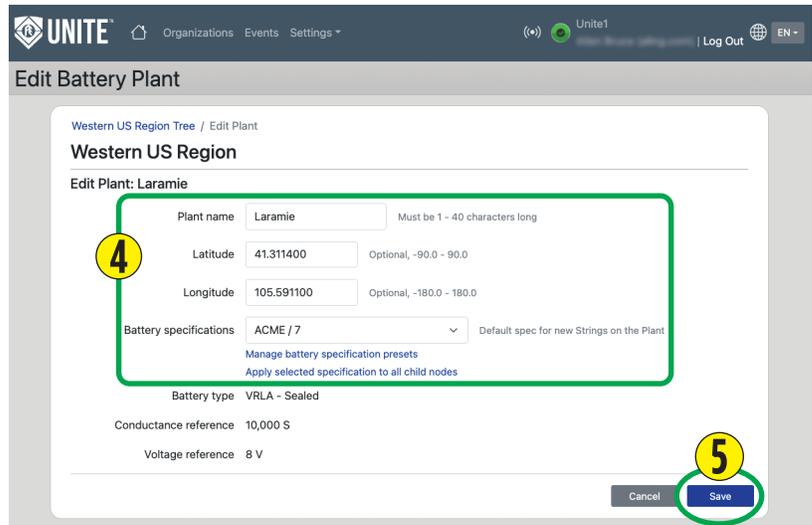
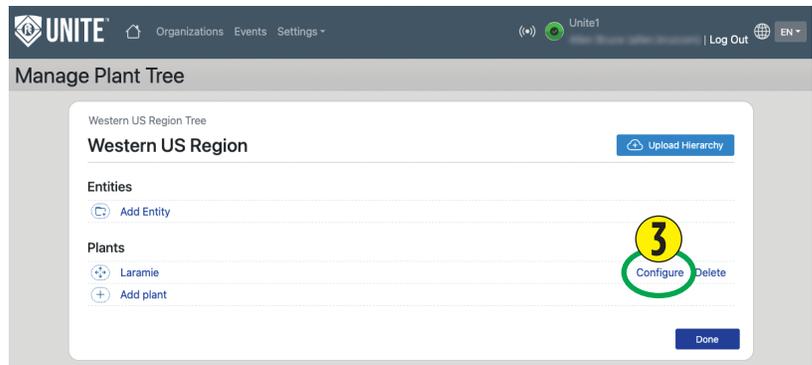
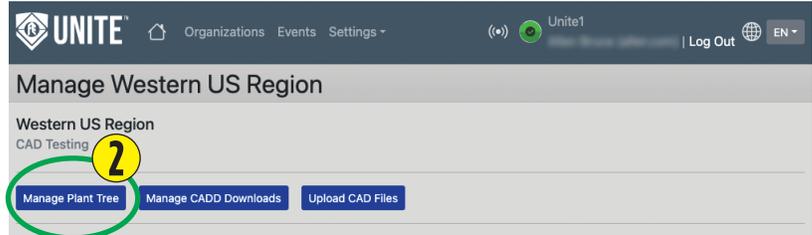
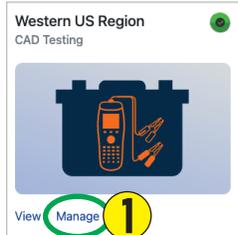
The screenshots illustrate the following steps:

- Manage Western US Region:** A modal window for 'Western US Region CAD Testing' is shown. The 'Manage' button is circled in green with a '1' in a yellow circle.
- Manage Plant Tree:** The 'Manage Plant Tree' page is shown. The 'Manage Plant Tree' button is circled in green with a '2' in a yellow circle.
- Plants:** The 'Plants' list is shown. The 'Laramie' plant is circled in green with a '3' in a yellow circle.
- Strings:** The 'Strings' list is shown. The 'West - String 1' string is circled in green with a '4' in a yellow circle.
- Manage Batteries:** The 'Batteries' list is shown. The 'Add Battery' button is circled in green with a '5' in a yellow circle.
- Create Battery:** The 'Create Battery' form is shown. A green box highlights the 'Number to create', 'Serial number', 'Manufacture date', and 'Battery specifications' fields. The 'Save' button is circled in green with a '7' in a yellow circle. A hand icon points to the location pin icon in the 'Create as batch' section.

NOTE: Select the box (📍) to create a batch of batteries with all of the same settings **OR** deselect to add batteries one by one with different data in the optional fields for each battery.

5.5 Editing a Plant

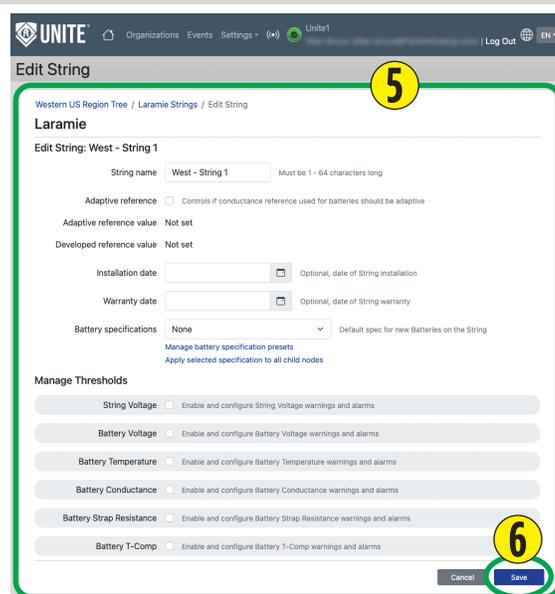
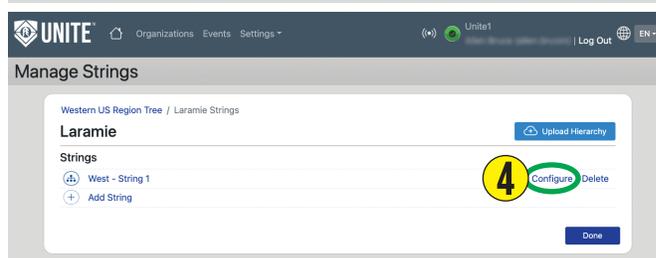
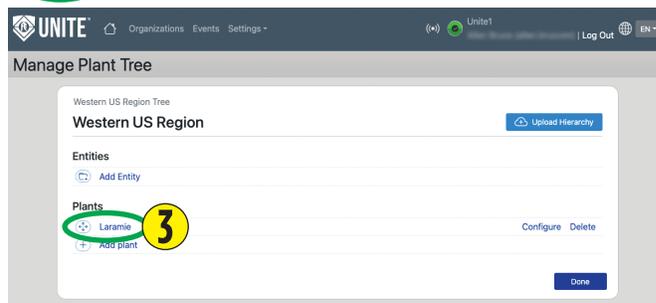
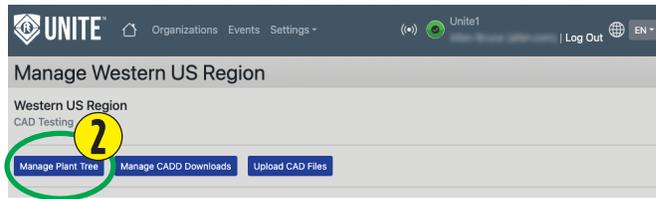
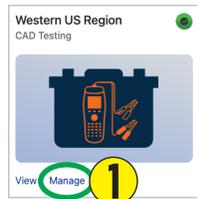
1. Select **Manage** on a CAD organization.
2. Select **Manage Plant Tree**.
3. Select **Configure** of the Plant to edit.
4. Edit **settings** as needed.
5. Select **Save** when finished.



5.6 Editing a Battery String

On the CAD Testing Organization containing the Battery String to edit:

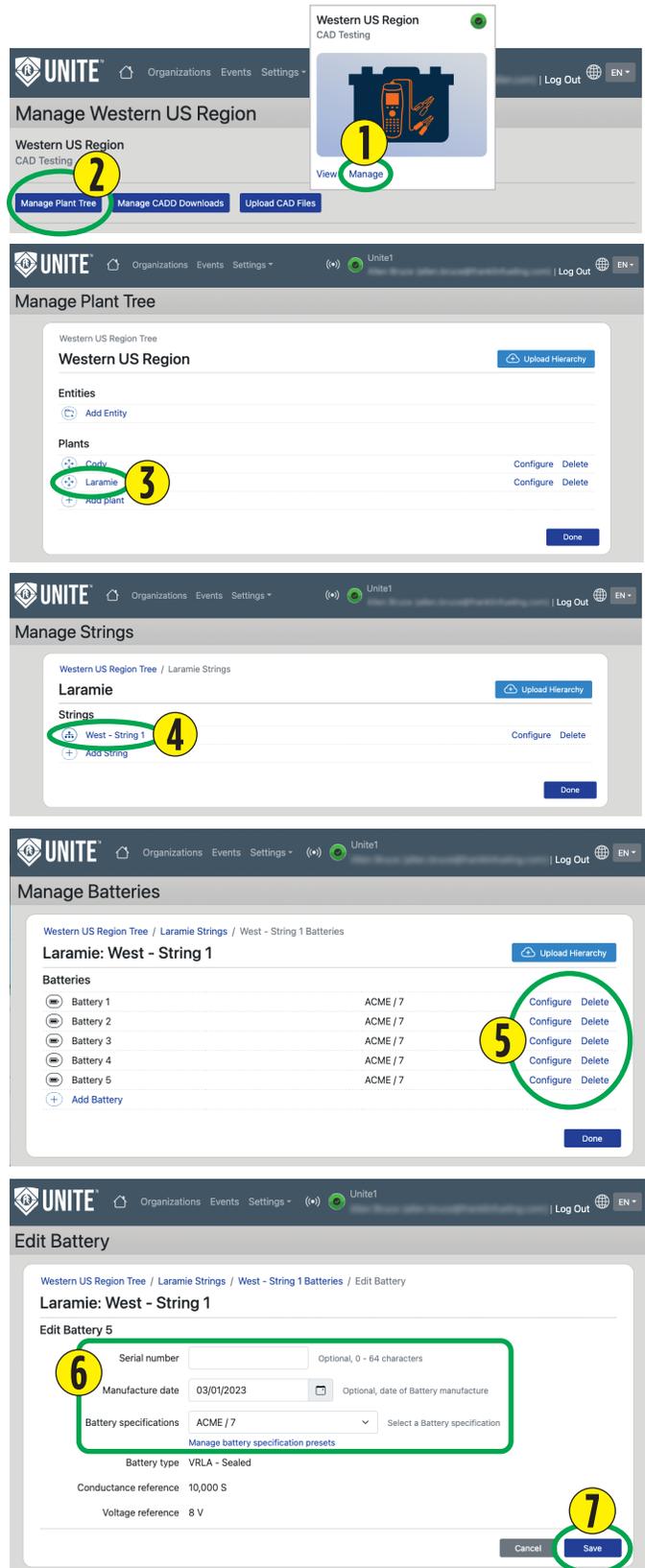
1. Select **Manage**.
2. Select **Manage Plant Tree**.
3. Select the **Plant** containing the String to edit.
4. Select **Configure** of the String to edit.
5. Edit **settings** as needed.
6. Select **Save** when finished.



5.6.1 Editing a Battery

On the CAD Testing Organization containing the Battery to edit:

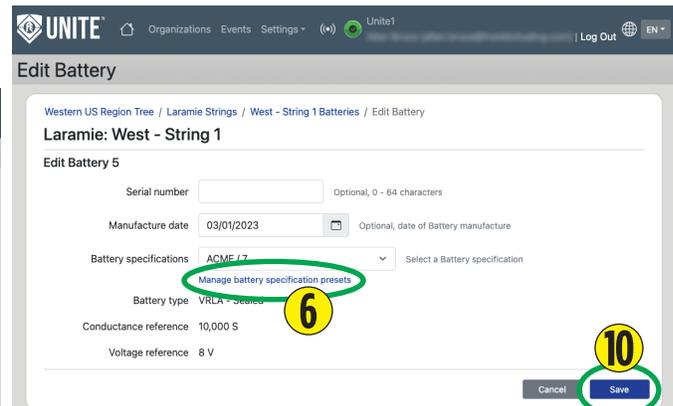
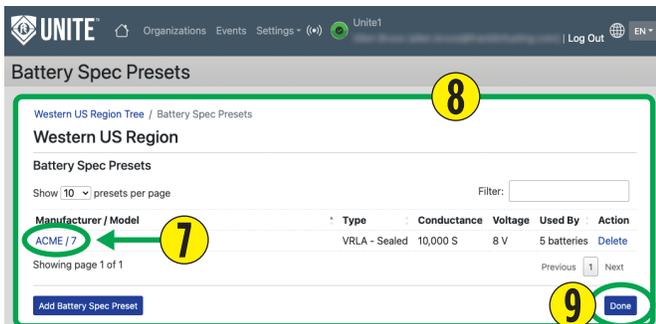
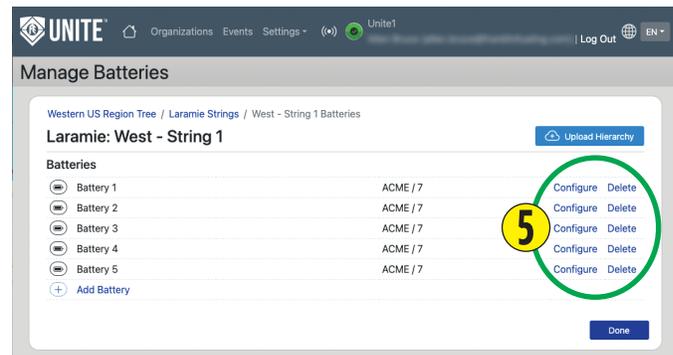
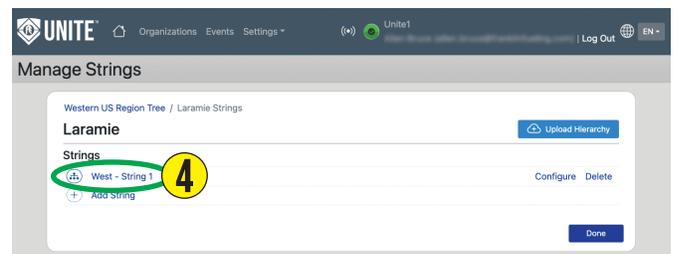
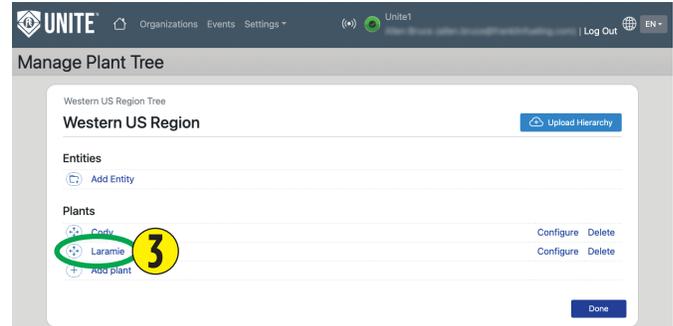
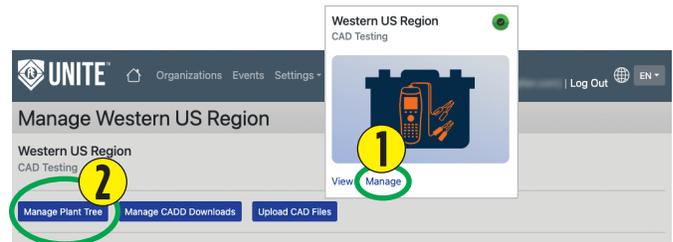
1. Select **Manage**.
2. Select **Manage Plant Tree**.
3. Select the **Plant** containing the Battery to edit.
4. Select the **String** containing the Battery to edit.
5. Select **Configure** to edit.
6. Edit **settings** as needed.
7. Select **Save** when finished.



5.6.2 Editing a Battery Specification

On the CAD Testing Organization containing the Battery to edit:

1. Select **Manage**.
2. Select **Manage Plant Tree**.
3. Select the **Plant** containing the Battery (Specification) to edit.
4. Select the **String** containing the Battery (Specification) to edit.
5. Select **Configure** to edit.
6. Select **Manage battery specification presets**.
7. Select the **Battery Specification** to edit.
8. Edit **settings** as needed.
9. Select **Done** when editing is complete.
10. Select **Save** when finished.



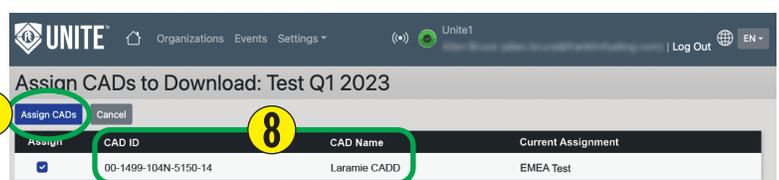
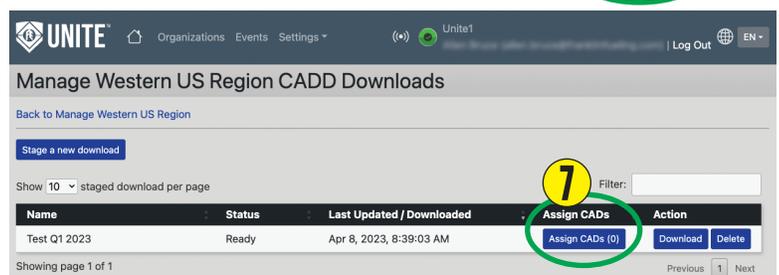
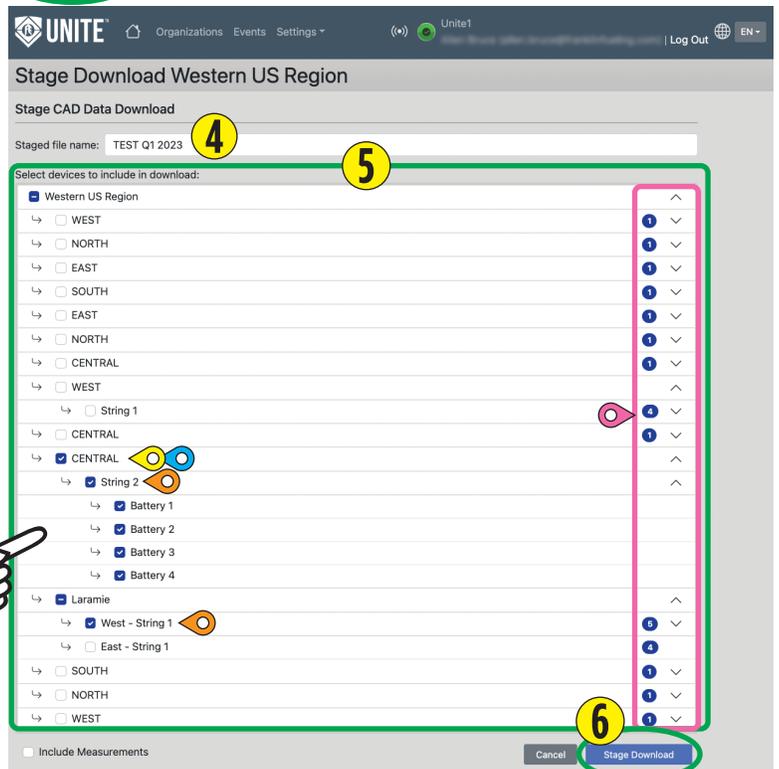
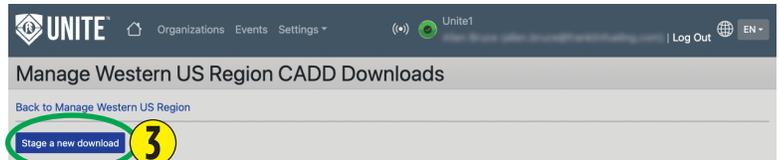
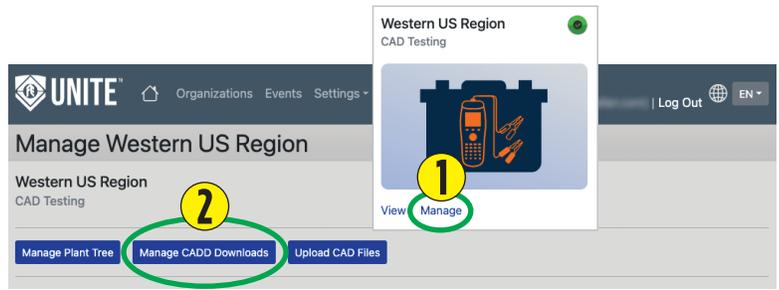
5.7 Staging a Download to the CADD

1. Select Manage.
2. Select Manage CADD Downloads.
3. Select Stage a new download.
4. Name the **download**.
5. Select the **Data** to be included in the download.*
6. Select Stage Download.
7. Select Assign CADD.
8. Choose CADD to download.
9. Select Assign CADs.

NOTE: See Step 10, “Download Data from UNITE™ to the CADD” on the following page, for illustrated details of initiating the download from the CADD.

***NOTE:**

- Plants (📍) are selectable and include all battery strings in that Plant.
- Selecting a higher level item (📍) will include everything below that level.
- Individual or multiple Battery Strings (📍) are selectable.
- Selecting a number will open sublevels of a selection while selecting an arrow will toggle the sublevel views open or closed (📍).



- Initiate the download from the CADD menu to transfer the UNITE™ Staged Download directly to the CADD.*

Download Data from UNITE™ to the CADD

10

📶 indicates network connection.

Make sure your CADD is connected to WIFI and UNITE.

From the Main Menu navigate to the WIFI Icon. Press F3 to SELECT.

Navigate to the DOWNLOAD Icon. Press F3 to SELECT.

Press F3 to confirm you want to get data from UNITE™.

You will see the "DOWNLOAD WAS SUCCESSFUL" message when all data is received.

View the data downloaded to the CADD

From the Main Menu navigate to the BATTERY TEST icon. Press F3 to SELECT.

Navigate to the EXISTING icon. Press F3 to SELECT.

Navigate to the SITES menu. Press F3 to SELECT.

Navigate to the PLANTS menu. Press F3 to SELECT.

From here you can see the Battery Strings that are setup in the CADD for testing.

NOTE: When battery testing is finished you can upload the data to UNITE™.

5.8 Uploading CADD Data to UNITE™

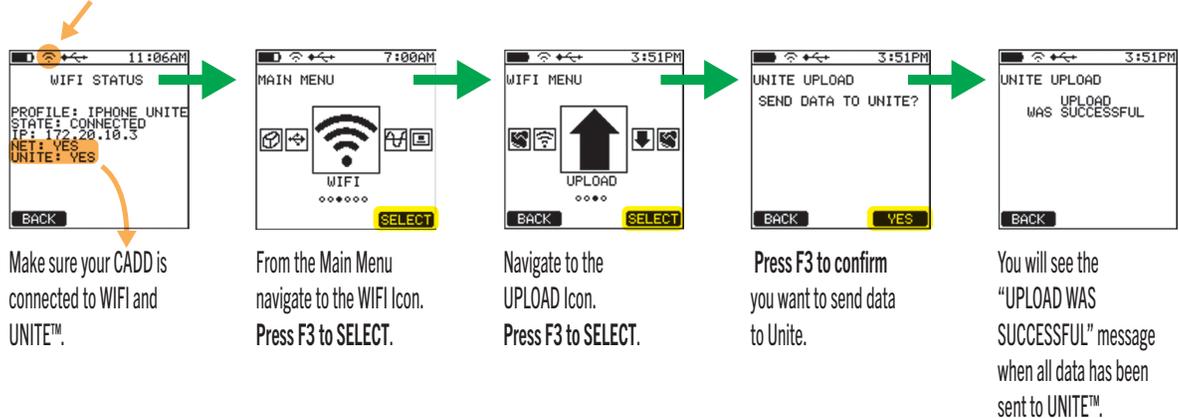
There are two methods for uploading data to the CAD Organization.

1. **Wirelessly** through the CADD device. *Following the CADD device instructions on uploading data to a commissioned UNITE™ server (see § 5.8.1).*
2. **Manually** uploading a CDI/CDO file to the server from your computer or a flash drive (see § 5.8.2).

NOTE: Validating pending CAD uploads may be required to complete either the wireless or manual methods.

5.8.1 Wireless Uploading of CADD Data to UNITE™

📶 indicates network connection.



5.8.2 Manual Uploading of CADD Data to UNITE™

NOTE:

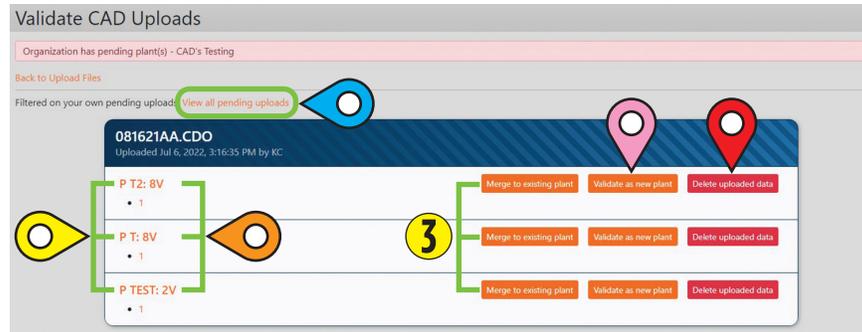
- Files for upload must be **.CDO** or **.CDI** files exported from CADD or CELLTRAQ™.
- Files for upload **CANNOT** be used to upload hierarchal information.
- Hierarchies may be uploaded from a different path to UNITE™ prior to uploading test data.

1. In the “Manage” section of the CAD organization, select **Upload CAD Files**.
2. Drag and drop a file into the **Add files** box in the middle of the page or select the **Add files** box to open a file selector window where you can navigate to the location of the **.CDI/.CDO** file you wish to import into your Unite™ organization.

NOTE:

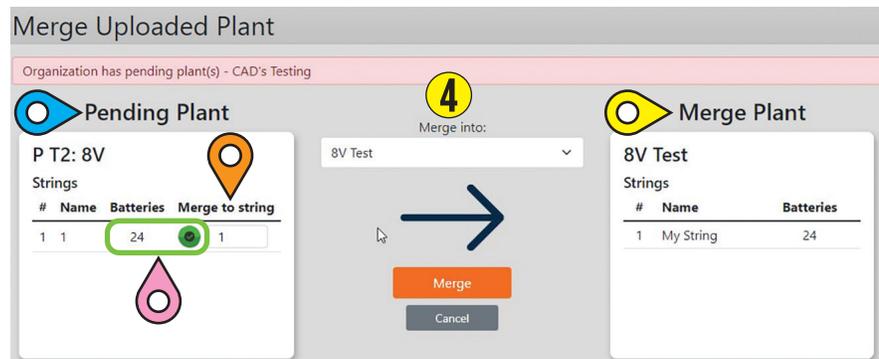
- All pending uploads (📍) are sorted by file name. Only current users’ uploads will display (default), select **View all pending uploads** (📍) to view all.
- You can click on each new Plant (📍) to view the data in the upload. All Plants and Strings will by default be created as new prior to validation and can be navigated via the view pages of the Organization.

- You may **Validate as new Plant** (📍) to keep the new Plants as they are, or you can merge the data into an existing Plant. Validation is only required when the pending uploads were not initially downloaded from UNITE™.
- You can also delete Plants from the upload (all new data will be removed for that Plant) by selecting **Delete uploaded data**. (📍)



NOTE: Plant validation is not required if all Plant data is imported to the CADD from UNITE™ either manually or wirelessly prior to testing.

3. Select **Merge to existing plant** to go to the “Merge Uploaded Plant” page.
4. Under **Merge into** drop down menu, select the Plant the uploaded Plant data should be merged into (data will populate in the right “Merge Plant” box).
 - The *Merge Plant* (📍) box displays a list of existing strings under that Plant and the number of Batteries in each String.
 - The *Pending Plant* (📍) box displays each string under the new Plant where optional actions can be taken for each string:
 - In the *Merge to String* (📍) column, enter the String number that the String should be merged to.
 - If the new String is to be unique under the existing Plant, enter a number one higher than the highest number existing String (i.e., if the existing Plant has two Strings, enter the number 3).
 - If the number of Batteries in the destination String matches the number of Batteries in the existing String a green check mark will appear as shown below (📍).



- If the number of Batteries does not match, a yellow warning icon will appear next to the String as shown below (🚩). Selecting the warning icon will activate a tool tip, describing the reason for the warning.

- If there are less Batteries than the destination String, it will match 1-n where n is the max Battery in the new String. If there are more Batteries than the destination String, new Batteries will be created and added to the destination String, numbered higher than the existing Batteries with the lower numbered Batteries matched.
5. Select **Merge** when all new Strings are matched with destination Strings to complete the validation for the plant.

- Successful merge to plant:

- Resultant Plant status after merge:

String	Timestamp	Voltage
My String	Aug 16, 2021, 5:35:00 PM	215.257 V

Battery	Timestamp	Voltage	Temperature	Conductance	Strap Resistance	T-Comp
Battery 1	Aug 16, 2021, 4:53:00 PM	8.998 V	23 °C	68 S	1 µΩ	108 %
Battery 2	Aug 16, 2021, 4:55:00 PM	8.994 V	23 °C	64 S	921 µΩ	101 %
Battery 3	Aug 16, 2021, 4:57:00 PM	8.988 V	23 °C	64 S	1 µΩ	101 %
Battery 4	Aug 16, 2021, 4:59:00 PM	8.985 V	23 °C	64 S	1 µΩ	101 %

NOTE: Validating pending CAD uploads may not always occur when manually uploading CAD files. Validation is only required when the pending plants were not initially downloaded from UNITE™ first.

NOTE: Validating pending CAD uploads may be required to complete either the manual OR wireless methods.

5.9 Hierarchies

5.9.1 Overview

Two data file types, Plant Hierarchy Setup Data (PHSD) and Test Data (CDI/O), are utilized for uploading/downloading data depending on the nature of the file content.

PHSD Files

- Data file uploads which setup (structure) for sites and plants.
- Typically .csv or .xlsx file types.
- Contain tabular data which can be variable and in some instances optional (see Table 5.1). File(s) may be supplemented with additional data.
- PHSD and Hierarchies have different upload paths than that of CDI/O files.
- Uploading PHSD content for a new plant requires no formatting oversight.

CDI/O Files

- CELLTRON™ Data Input (.cdi) and Output (.cdo) files, compositely referred to as CDI/O files.
- Upload/download test data.
- Can create new Plants but not including the Hierarchies they exist in.
- The CADD must be authorized in the Organization to allow uploads.

5.9.2 Format PHSD Files

The following formatting recommendations should be followed.

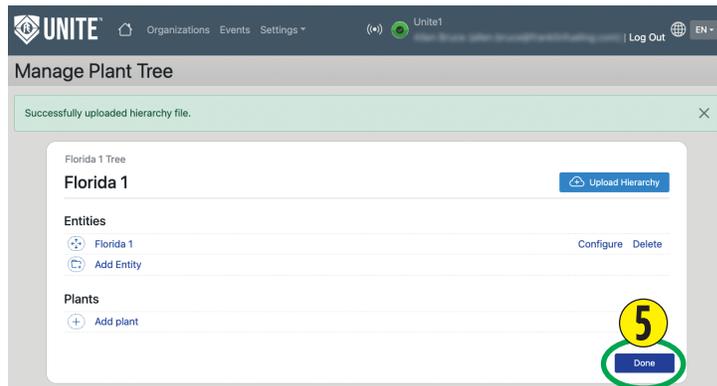
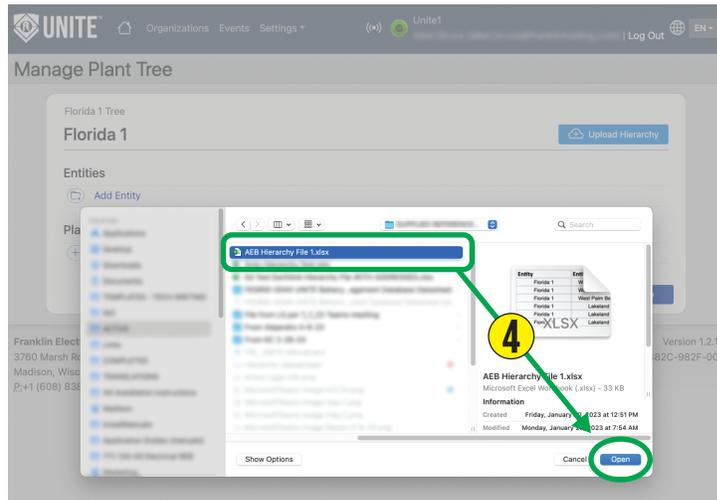
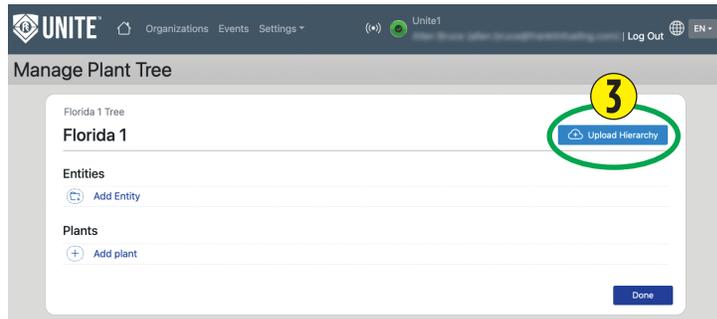
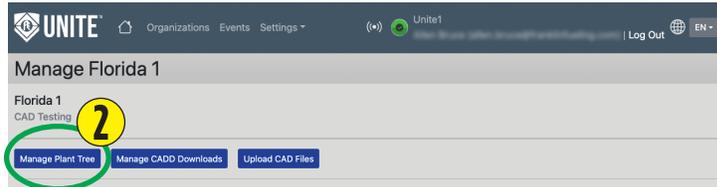
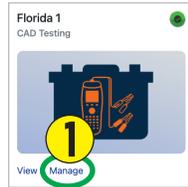
- Every Plant name should be unique to avoid confusion later in Organizations where multiple Plant 1's could exist if the same naming convention for each Entity is repeated.
- Spreadsheet data sets (columns) are read left to right (column headings must match template).
- Best practice is to leave no blank data sets (columns) in the spreadsheet, potentially avoiding unpredictable behavior.
- Sites must be listed after Entities.
- Entities and Sites (Addresses) are all optional data sets.
- The minimum required data sets (columns) are **Battery Plant**, **Strings** and the **Battery Quantity** in the Strings.
- There is no required number of Entity columns. Entity columns may be added or removed (at the left) for the desired Hierarchy depth.

Table 5.1 – Plant Hierarchy Setup Data Fields

OPTIONAL DATA FIELDS								REQUIRED DATA FIELDS							
Entity	Entity	Site	Site Address	Site City	Site State	Site Zip Code	Site Country	Battery Plants	String	Bat. Qty.	Mfg.	Model	Battery Type	Voltage	Ref.
Idaho	Rio	WPBHFL1234	123 N Av	Rio	ID	33401	USA	Plant RED	String 1	4	GS	PWL12V28	VRLA-Sealed	12	400
Idaho	Rio	WPBHFL1234	123 N Av	Rio	ID	33401	USA	Plant BLUE	String 2	4	GS	PWL12V28	VRLA-Sealed	12	400
Idaho	Rio	WPBHFL1234	100 SSt	Rio	ID	33401	USA	Plant GREEN	String 1	4	GS	PWL12V28	VRLA-Sealed	12	400
Idaho	Dunn	LKLDLFL1334	123 E Av	Dunn	ID	33801	USA	Plant ORANGE	String 1	24	GNB	90G05	VRLA-Sealed	2	648
Idaho	Dunn	LKLDLFL1334	123 E Av	Dunn	ID	33801	USA	Plant VIOLET	String 1	4	North Star Battery	NSB 13 TT Red	VRLA-Sealed	12	326
Idaho	Hazel	LKLDLFL1334	123 E Av	Hazel	ID	33801	USA	Plant PERIWINKLE	String 2	4	North Star Battery	NSB 13 TT Red	VRLA-Sealed	12	326

5.9.3 Upload Hierarchies

1. Select Manage.
2. Select Manage Plant Tree.
3. Select Upload Hierarchy.
4. Navigate to the spreadsheet file typically a .csv or .xlsx and select Open.
5. Select Done*.



NOTE: *Refer to § 5.9.4 for menu navigation tips.

5.9.4 Subsequent Menu Navigation

- Selecting the name of the Entity from the Hierarchy uploaded (📍), allows viewing of the subsequent data set (column) of the uploaded file. Any variable data in a data set (column) will be listed and selecting any listed entry under Entities continues to allow the viewing of subsequent data sets (columns) for that selection until the last data set (column) is displayed for that Entity.
- Selecting Done or a previous level (📍) in the path listed at the top of the window will go back to the preceding level.

The screenshot displays the UNITE 'Manage Plant Tree' interface. The breadcrumb path at the top of each window is: Florida 1 Tree / Florida 1 / Lakeland / LKLDL1334 / Plant ORANGE Strings / String 1 Batteries. The interface shows a series of overlapping windows representing the navigation path:

- Florida 1 Tree:** Shows 'Florida 1' as the selected entity. A yellow location pin icon is next to the name.
- Florida 1:** Shows 'Lakeland' as the selected entity. A yellow location pin icon is next to the name.
- Lakeland:** Shows 'LKLDL1334' as the selected entity. A yellow location pin icon is next to the name.
- Plant ORANGE:** Shows 'String 1' as the selected entity. A yellow location pin icon is next to the name. A blue location pin icon is also visible in the top right corner of this window.
- Plant ORANGE: String 1:** Shows a list of 24 batteries. Each battery entry includes a name (Battery 1-24), a status icon, and a code (GNB / 90G05). A 'Done' button is at the bottom right.

6 Troubleshooting

6.1 Device Connection Issues

6.1.1 Root Cause: Date/Time Issue

Wi-Fi Routers and server security may reject a connection if the date and time is not set properly for its location. The resolution of this varies by device type:

6.1.1.1 CADD

The CADD is unable to configure NTP servers and therefore has a tendency for date/time to drift. Other causes of date/time issues are crossing time zones with the device or daylight savings time changes.

Symptoms of this type of connection issue

1. A CADD that will initially connect to Wi-Fi but lose connection to the Wi-Fi router (the router rejecting the device connection based on its time) during the download/upload process such that the download/upload does not complete and the Wi-Fi indicator icon changes to the x indicating no connection.
2. Repeated failed connection to a Wi-Fi profile that has routinely functioned before on a Wi-Fi network that works for other devices (phones, computers).

Resolve this issue with CADD or rule out this issue with CADD

1. Go to the date/time settings on the CADD Device and set the time one minute ahead of the current time without saving.
2. Pull up a reliable time source (computer, phone or NTP website) that displays seconds. As your time source changes to zero seconds at the top of the minute setting for the CADD, hit **SAVE**. This will get your CADD as close in seconds as possible to the network it is attempting to connect to.

6.1.1.2 BCU

BCUs can have date and time issues for similar reasons to CADD if the NTP server is not set for the device.

The ideal and permanent resolution for BCUs with access to the network is:

1. Configure a connection to an NTP server in the device configuration.
2. Reboot the device.

Using an NTP server, requires your network settings must also have DNS servers and gateway configured. If NTP is unable to be configured, edit the date and time on the device to match a reputable time source as close as possible in seconds.

6.1.2 Root Cause: Network Configuration

6.1.2.1 Gateway

To communicate with a server outside of the device's immediate network switch, or with a server outside the device's subnet, the Gateway address must be set for the device so that it can establish external routing. Verify that the Gateway address is configured on the device.

6.1.2.2 DNS

To communicate with a server by domain name rather than IP address which is a key device security requirement for the connection of these devices to UNITE servers, DNS servers must be configured on the device, or the domain name will not be resolved for the device.

6.1.3 Root Cause: MQTT Configuration

- Make sure the MQTT passwords match between device and server.
- Revisit the MQTT Configuration on the device.

6.2 Unable to Add Device, User, Plant, or Organization

Issue

The link to add a Device, User, Plant, or Organization does not display.

Potential Resolution

The Organization owner's credits may be expended. Contact Franklin Electric to replenish credits.

7 Appendix

7.1 Contact Information

Tech Support: FGSTechsupport@franklingrid.com

Customer Svc: GridCustomerService@fele.com

Grid Pro University: <https://gridpro.exceedlms.com/student/catalog>

Web: www.franklingrid.com

7.2 Related Documents

Documentation can be found online at www.franklingrid.com.

TABLE 5.1 – Related Documents

Part Number	Description
167-000450	CELLTRON™ Advantage Digital User Guide
10000008420	CELLGUARD™ Wireless BMS Install Guide
10000008964	DTM User Guide

7.3 Related Videos



**UNITE™ Asset
Management
Overview**



**CELLTRON™
ADVANTAGE DIGITAL
(CADD) & UNITE™**

7.4 Glossary

BCU.....	Base Coordinator Unit, <i>controller</i> component of the CELLGUARD™ Battery Monitoring System (BMS)
BCU Organization	Data set for a BCU
BMS	Battery Monitoring System
CAD.....	CELLTRON™ Advantage Handheld Tester
CADD	CELLTRON™ Advantage Digital Handheld Tester
CAD Organization.....	Data set for a CAD
CONVERGE™	Web interface allowing installation, remote system monitoring, alarm threshold configuration, reporting, over-the-air sensor firmware updates and saving BCU data in the UNITE™ database
DTM Organization	Data Set for a DTM
Entity	An optional Hierarchy level containing a Site, Plant, and a String for the purpose of organizing Plants when an Organization has many Battery Plants
Organization	A Hierarchy system used to organize all information for a specific type of asset to be monitored.
USB.....	Universal Serial Bus
VTC.....	Voltage, Temperature Current Unit

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