Remote HMI App

SAFETY NOTICE:

The C-more Remote HMI mobile app allows the user to connect to C-more panels from Ethernet, wifi, or cellular network connections. The Remote user can fully operate and monitor the local HMI system and affect the function and control of the application just as the local operator controls it. Proper Control, Security and Safety procedures should be considered and implemented when utilizing the Remote Access feature. There are various ways to control, limit and log remote users explained in the C-more programming software help file "Remote Access Setup" topic. It is recommended that users are required to log in and enter a password to access the C-more Panel remotely.

App Download Location:

Apple iOS Users: The iOS version of the Remote HMI app can be downloaded from the iTunes App store to any iPhone/iPad/iPod Touch devices running iOS version 4.2 or later.

Android OS Users: The Android version of the Remote HMI app can be downloaded from the Google Play store to Android Devices with OS Versions 4.1.2 or up.

Refer to the Setting Up Remote Access section of the C-more Programming Software help file to configure the C-more panel to allow the Remote HMI app to function

Remote Access Benefits

The C-more Remote HMI App allows authorized users to connect their Mobile Touch device to the C-more panel from a Wi-Fi or cellular connection. The remote user can fully operate and/or monitor a remote C-more panel. This can reduce the need for the user to be onsite to view or operate the C-more panel. The HMI Project can also be configured so that the local operator can enable or disable control at any time by using assigned tags on one of the project screens.

This feature allows authorized users the ability to:

- Remotely control the screen operations of the C-more panel as if touching the panel itself.
- Remote Monitor real time screen operations.
- Allow system integrators to support onsite end users.
- Remotely troubleshoot and test the C-more project application.
- Remotely view, zoom, and save screen captures of active screens.

Requirements

Requirements to use the Remote Access feature are:

- Mobile Devices
    - o iPhone/iPad/iPod Touch iOS version 4.2 or later
    - o Android Mobile device with version 4.1.2 or later
        - Because there are thousands of hardware platforms Android Operating System, AutomationDirect cannot guarantee the app will function on every hardware platform.
- C-more Products
    - o C-more Panel with Ethernet port (panels with xxxx–R part numbers do not support Ethernet).
    - o C-more Programming Software Version 2.73 or later is required to program and configure a C-more panel to support the Remote HMI App.
    - o The C-more Panel must have compatible network settings with the device running the Remote HMI App.

Security Concerns

Firewall: If you plan to have external users accessing the C-more panel via the Internet, it is highly recommended that a Firewall be used for security purposes. This is true for any device that can be accessed from the Internet. Although C-more panels have a Remote Access account for assigning passwords, it is more secure and recommended that you use a Firewall to reduce the chances of unauthorized access. Most routers offer Firewall support.

VPN: Although the Remote Access feature for the C-more panel can be configured with password protection, connecting the C-more panel on an Enterprise network or the Internet exposes security risks. A secure and encrypted VPN connection is highly recommended if the C-more panel will be accessible from the Internet. A VPN (Virtual Private Network) uses encryption and other security mechanisms to ensure that only authorized users are allowed to connect and that the data cannot be intercepted. A VPN greatly reduces the chances of malicious behavior and unauthorized connections.

Project Protection: If the project loaded in the C-more panel was saved as a "Protected Project File", then users who go online with the panel cannot save or edit the project using the IP Address that they have been given for the Remote Access Connection. This keeps users from intentionally or unintentionally saving or editing the project file. The project should be protected if the panel is located on the internet and users know the IP Address.

Remote Access User Accounts: There are three Remote Access user Accounts that are configured and stored in the panel project. Each Account has a "Permission Level" field that can be configured by the user. The user accounts are for Remote Access permissions. Each of these three accounts has three possible permission levels that can be assigned to the account.

These permission levels are:

- View Only
- View and Screen Change (Screen Change Push Button only)
- Full Control

Account Passwords: Each Remote Access user account allows passwords that are configured and stored in the panel project. If the password is assigned in the panel project, the C-more Remote HMI App user will be required to type in the correct user name and password in order to view and control the C-more panel with the app.

Note: If the Account Name and Password are configured for the account and the incorrect user name and/or password is entered, access to the C-more panel will not be granted, a message box will appear notifying the user that the data entered is invalid and the login screen will reappear.

# Getting Started with the Remote HMI App:

Make sure the Mobile Device cellular or Wi-Fi features are enabled and that you are connected to the network. The C-more panel must be configured to enable the Remote Access and Control feature. See Setting Up Remote Access for complete details. These settings are stored with the C-more panel project and loaded to the panel with the C-more programming software.

Remote HMI App

Remote HMI Workspace: The C-more Remote HMI App workspace is the Graphical User Interface that is used to set up communications, select a panel for connection, and control the interactions with the remote C-more panel. The Workspace is always visible when there has not been a connection made to a C-more panel. Once connected, the Workspace will remain visible for about 5 seconds and then disappear. When the screen is touched by the user, the workspace will reappear and stay active as long as it is in use, timing out 5 seconds after the last touch.

Note: The Unlock Safety Button must be active (On) in order to interact with the remote C-more panel.
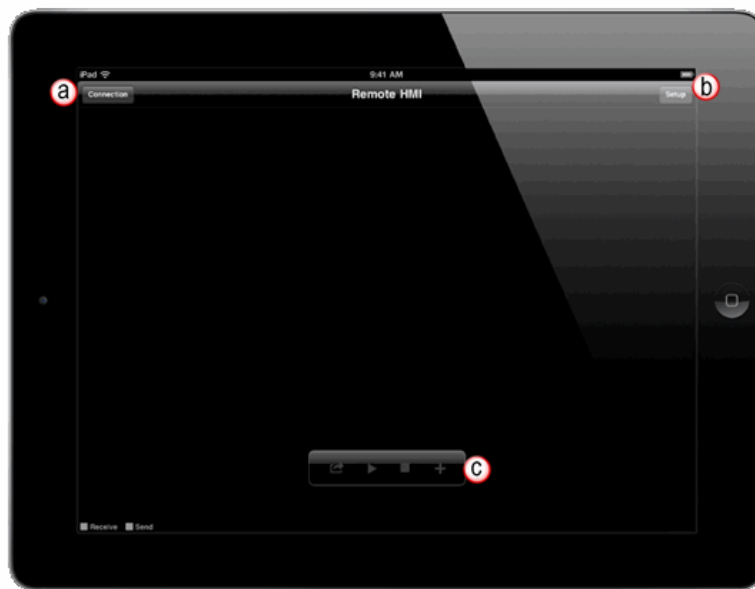

The image above shows the **C-more Remote HMI App Workspace**:

a. **Connection:** Choose the **Connection** button to access a remote **C-more** panel. See **Connection** for complete details.
b. **Setup:** Touch the **Setup** button to configure the Client app and panel connection settings. See **Setup** for complete details.
c. **Connection Toolbar:** The video style **Connection Toolbar** offers quick access to multiple tools. See **Connection Toolbar** for

Note: The Unlock Safety Button must be active (On) in order to interact with the remote C-more panel.

Connection:

Choose the "Connection" button to select a method of connecting to the C-more panel.
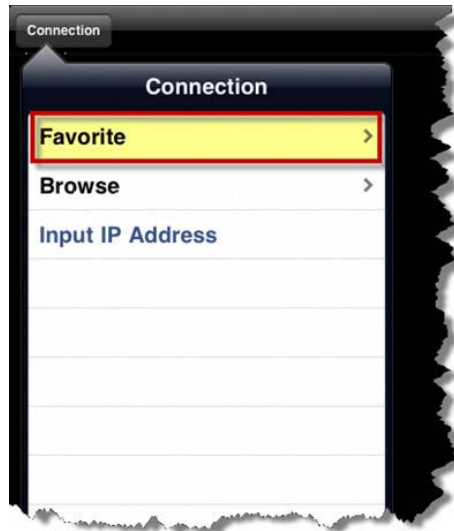
Favorites:

Favorite makes it faster and simpler to remotely connect to a specific C-more panel by allowing users to save the settings required to connect. As an option, the logon settings can also be saved with each Favorite address to simplify the connections.
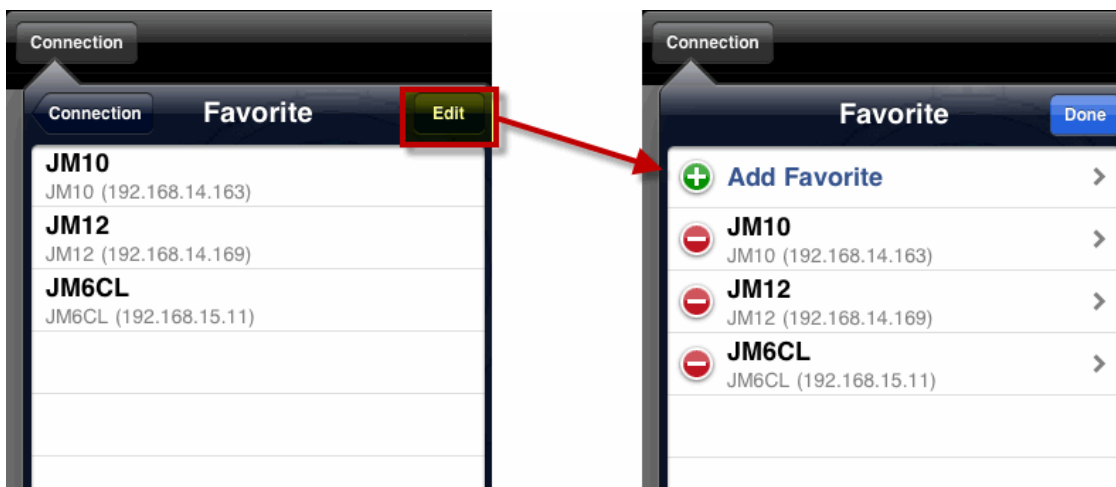
Adding a Favorite:

Favorites can be added by selecting the **Edit** button on the **Favorite** menu or a favorite can be saved by using the connection **Toolbar** that appears only when connected to a remote **C-more.**

Configuring the Favorite Properties:

a. **Name:** If adding a favorite while connected to a **C-more** panel, the name field will automatically insert the name that is stored in the panel project. The user has the option of keeping the same name or saving the favorite under a different name. Saving the favorite with a different name does not change the name stored in the panel, it simply creates a favorite list in the app with any name you choose. Saving the favorite name to match the panel name is considered the best practice.

b. **Port No:** The default port number for **C-more** panel **Remote Access** is 11102. The **Port No.** is the destination TCP port number used by the (Client) Remote HMI App and the listening TCP port of the **C-more** panel for this connection. This will be needed for access through a Firewall/Router if not using a VPN connection. The port number in the C-more Remote HMI app must match either the port number configured in the Remote Access Server Function or the external port number configured in the router's port forwarding setup. Some router's port forwarding feature allows you to not only redirect the IP address but also the internal port number. Consult your router's documentation for this setup or the IT administrator on the target network. If a VPN connection is being used, you can just use the default port setting of 11102. Refer to the **Router Setup for Internet Access** section of the Help File for more information on port numbers.

c. **IP Address:** The **IP Address** can be manually inserted or, if adding a favorite while remotely connected to a **C-more** panel, the field will automatically populate the **IP Address** of the panel.

d. **User Name:** Enter a valid user name. The user name is stored in the **C-more** panel project and is configured using the **C-more** programming software. If an account is activated in the **C-more** panel, but a user name and/or password are left blank in the configuration, then the panel will be accessible through that account by anyone.

NOTE: If the **C-more** panel is controlling an application that could cause damage or serious injury to local operators or machinery being controlled by the panel, accounts should be limited to those authorized to view or control the remote application.

e. **Password:** The **Password** feature is recommended but not required. The account **Passwords** are stored in the **C-more** panel project.

f. **Register Password:** If this field is enabled, the user name and password will be stored with the favorite file. This will eliminate the need to type a user name and password when choosing a connection from the favorites list. Although this field simplifies the connection to the **C-more** panel, it also may allow unauthorized users access to a remote panel if the Mobile device is used by an unauthorized user. It is recommended that this field be disabled (Off) if there are concerns for security and safety.

Browse: The browse tool causes the Remote HMI app to send an Ethernet multicast request over the local network to search for all C-more HMI panels that are connected to the local network.
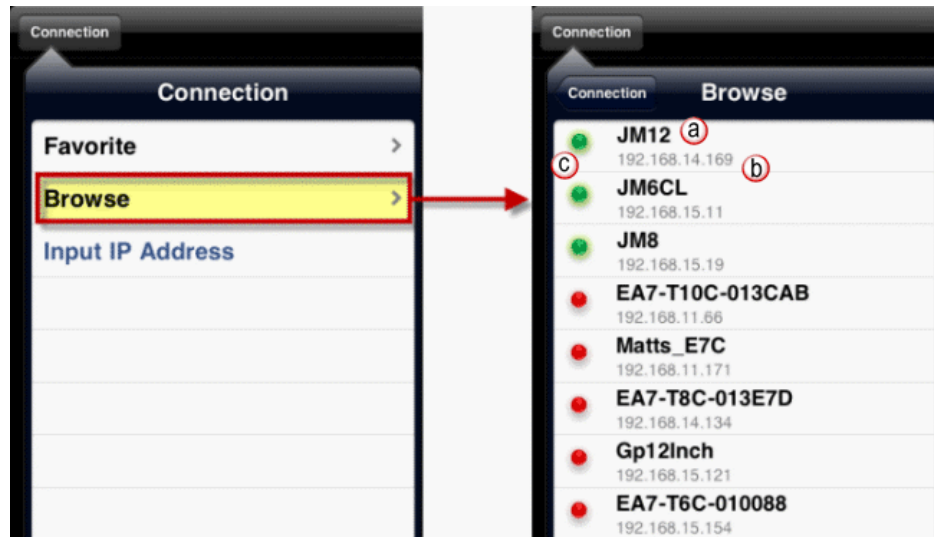
Browse List:
The **Browse List** will display the following information from the remote **C-more** panel.
a. **Panel Name:** The name stored in the panel memory or panel project. This name is configured in the project with the **C-more**
Programming Software.
b. **Panel IP Address:** The IP address of the **C-more** panel. The IP address is stored in the panel memory or the panel project
c. **Color Indicators:** Each **C-more** panel listed on the network will have a colored indicator to the left side of the panel name to show if the **C-more** panel supports the **C-more Remote HMI App**. When an incompatible **C-more** panel is selected, an error message will appear with an explanation of the error. These indicators are used to describe the following...

> **Red:** The **C-more** panel was found but the firmware in the panel is incompatible with the **C-more Remote HMI App**. The **Cmore** panel must be using firmware Version 2.73 or later.
> **Yellow:** The C-more panel was found, and the firmware is compatible, but the **Remote Access Feature** has not been enabled in the Panel. This feature is configured with the **C-more Programming Software** and saved to the project stored in the panel. See **Setting up the Remote Access** in this help file.
> **Green:** The **C-more** panel was found, the firmware is compatible and the **Remote Access Feature** in the panel is enabled.

The **Browse** feature does have some limitations:
Routers: Many routers do not support Multicast. If you are connected through a router and the browse multicast does not function, you will need to input the IP address of the **C-more** panel manually. Once connected, the panel can be saved to the **Favorites** list to eliminate the need to enter the IP address for the panel manually each time you want to connect.
Timing: If there are several **C-more** panels on the same network, it is possible that some panels are not shown in the list due to network response time or response collisions. The browse may have to be executed more than one time in order to populate the list of **C-more** panels on the network.
Cellular or VPN Connection: VPN (Virtual Private Network) and cellular connections do not support Ethernet multicast. You will need to input the IP address of the **C-more** panel manually. Once connected, the panel can

be saved to the **Favorites** list to eliminate the need to enter the IP address for the panel manually each time you want to connect.
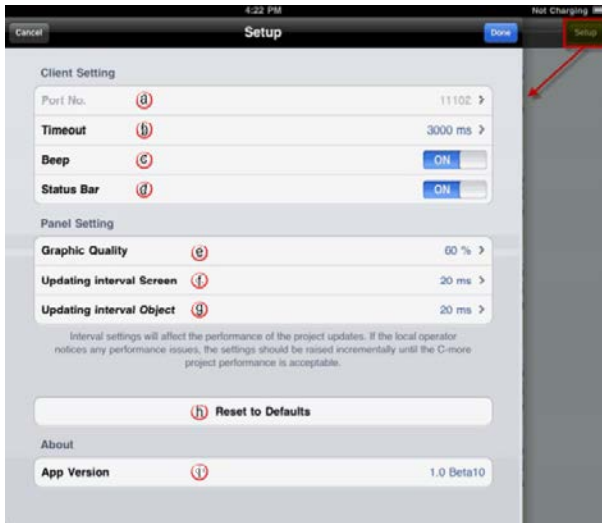
Setup:

The Setup Button contains the settings used to modify the performance of the Remote HMI App connection. The Client settings are stored in the Remote HMI app. The "Panel Settings" are stored in the C-more panel and if changed will maintain the values of the last settings entered. Selecting the Setup Button will pop up the Setup window.

Client Settings: Client (Mobile Device) settings do not affect performance or local operations at the **C-more** panel.

Port No.: The default port number for **C-more** panel **Remote Access** is 11102. The **Port No.** is the destination TCP port number used by the (Client) Remote HMI App and the listening TCP port of the **C-more** panel for this connection. This will be needed for access through a Firewall/Router if not using a VPN connection. The port number in the **C-more Remote HMI App** must match the port number of the **Remote Access** port of the **C-more** panel. If a VPN connection is not being used, then the **"Port Forwarding"** feature of your router must be used and the port number of the **C-more** panel must also be unique for each panel on the local network when those panels are accessed from outside of that network. Refer to the **Router Setup for Internet Access** section of the help file for more information on port numbers.
b. **Timeout:** Affects the Client (Remote HMI App) side of the application in milliseconds. Increase the timeout value to reduce timeout errors on slow connections such as cellular connections with poor signal strength.
c. **Beep:** The **Beep** sound is heard when the **C-more Remote HMI App** user activates an input object on the **C-more** panel project. The remote user can choose to hear the **Beep** on the Client (Remote HMI App) or turn it off. This does not disable the **Beep** sound at the panel itself, only the remote Client. The **Beep** will sound if the **C-more** panel acknowledges that an input object has been pressed.
d. **Status Bar:** The **Status Bar** is located at the bottom of the **C-more Remote HMI App** workspace and is displayed by default. It can be enabled or disabled by the user as needed. Refer to **Status Bar** later in this topic.

Panel Setting:

These settings affect the communications settings at the remote **C-more** panel (Server) side. **Panel** operational performance may be affected by the adjustment of the communication settings in some applications that are processor intensive (such as PLC communications, data logging, and animation). Unlike the **Client Settings**, these settings are stored in the **C-more** panel and are retained across sessions. This means that if the panel settings are changed while a remote user is online, another user connecting from a different **C-more Remote HMI App** will connect with the same settings last entered to the panel. For this reason each user may need to make adjustments to the setup items based on their network connection speed and performance.

e. **Graphic Quality: Graphic Quality** reduces the resolution of the screen objects. This feature was added to accommodate users who may not need **100%** graphic quality and are more interested in a faster update rate. If users prefer high quality graphics, then the setting can be placed at **100%**. This setting will be determined by the network speed for the amount of data on any one screen. The default is **60 %**.

f. **Updating Interval Screen: Updating Interval Screen** determines the rate at which the screen change updates will occur. For faster update rates, this value should be lowered. This can affect the performance of the local operations as the **C-more** panel may also be processing other requests such as PLC communications, data logging, and animation. Default is **2000 ms**.

g. **Updating Interval Object:** This setting determines the rate at which the **Objects** on the screen will update when its state changes. If there are many objects on the screen that are changing frequently, the user may increase the update time to reduce the amount of data that must be transferred. If a real time update is preferred, then this setting can be lowered to update faster. This is based on the user preference and can be affected by network traffic. This will affect the performance of the local operations at the C-more panel. Default is **200 ms.**

h. **Reset to Defaults:** This will reset the client settings and the panel settings to the **C-more Remote HMI App** defaults.

i. **About App Version:** This contains the version number of the **C-more Remote HMI App** in use.
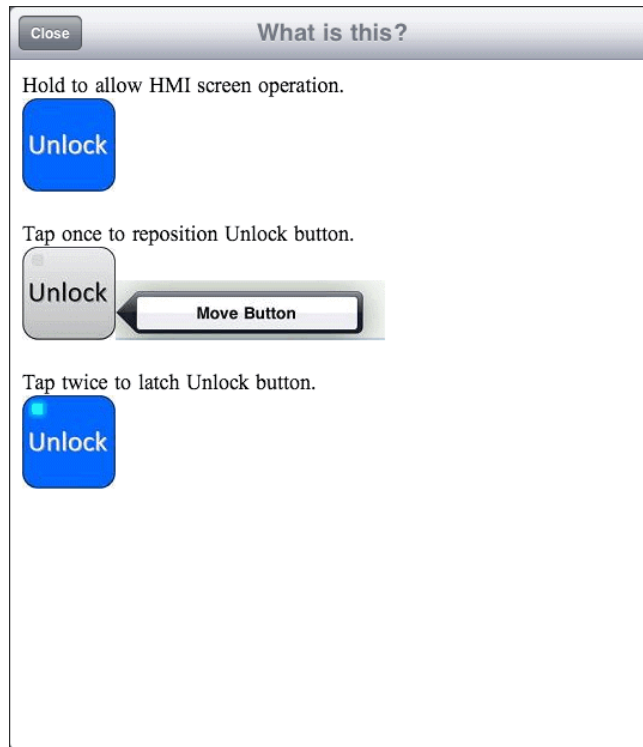
Unlock Button: The **Unlock Button** feature has been added to help reduce unintentional activation of the remote **C-more** panel inputs, such as buttons and keypads entries. Mobile devices are susceptible to being dropped or the screen being touch by a user unintentionally. When in the **"Off"** state, the **C-more Remote HMI App** workspace tools are active and allow the user to interact with the app menu items, zoom/pan actions, and control all touch interface features. The user cannot interact with the remote application if the Unlock Button is in the "OFF" state.

Note: The **Unlock Button** must be active (On) in order to interact with the remote **C-more** panel.

When the **Unlock** button is active, **the C-more Remote HMI App** controls all touch interfaces to the **C-more** panel. The device functions as a **C-more** panel in this state. The **C-more Remote HMI App** workspace GUI tools are not accessible when the **Unlock** button is active, and the app menu items and zoom/pan features of the Mobile Device are not accessible. To re-establish these features, the unlock button must be deactivated.
Unlock Button States:
Off: (Default State) When the user first logs into the remote **C-more** panel, the Unlock buttons default mode is not active (off). In the "Off State", the Mobile Device acts in a local mode which activates the **C-more Remote HMI App** workspace tools and also allows the user to zoom and pan and control all local touch interface features.
Momentary: (Press and Hold) In the touch and hold mode, the **Unlock** button acts as a momentary button and is active only while being touched. This enables the user to interact with the **C-more** panel project interface.
Latched: Double tapping the button will latch it in the active(On) state and will remain in the active state until pressed again. This allows the user to interact with the remote **C-more** panel project as if operating the panel as a local operator.
Move: Tap the button one time to view the **Move** button. Tap the **Move** button to enable the **Move** feature. The **Move** feature allows the user to place the **Unlock** button anywhere on the screen as needed so that it does not interfere with the operation of the remote **C-more** panel inputs or block the view of objects on the remote screen.

Connection Toolbar: The **Connection Toolbar** allows the **C-more Remote HMI App** to control the connection to the remote **C-more** panel. The **Toolbar** is designed much like the video control toolbar found in many popular video control software.

a. **Save Image Button:** Allows the **C-more Remote HMI App** user to save a Jpeg image to the photo section of the Mobile Device. This can be used to capture images of trends, alarm windows, or other screen items that may need to be reviewed at a later time. It is also a great tool for saving images to be used in documentation or the application.
   a. The app will save the screen capture in a .jpeg format to the "/Device/Remote HMI" folder

Note: Most Mobile devices support a screen capture feature that allows the user to capture the active screen image as a jpeg. Refer to your devices user manual on how to use this feature.

b. **Pause/Play Button:** The pause button will cause the **C-more Remote HMI App** to pause the updates from the remote **C-more** panel while still maintaining the connection to the panel. When pressed the button state will change and show the triangular **Play** button. When the play button is pressed, the remote **C-more** screen status will begin to update.

c. **Stop Button:** When the **C-more Remote HMI App** is connected to the remote panel, the **Stop** button will allow the user to disconnect the **C-more Remote HMI App** from the **C-more** panel without closing the **C-more Remote HMI App** workspace GUI. The app will display the last updated status of the remote **C-more** screen. Once disconnected, the stop button will be grayed out and the play button will then be activated. The user can press the Play button to reconnect the app to the remote **C-more** panel. The user login information will appear as it does when a new connection is made to the **C-more** panel.

d. **Add Favorite Button:** The **Add Favorite** button allows the user to add and edit the active **C-more** panel connection to the list of favorites. This list allows simpler connection to the most used **C-more** panels.

Saving Favorites File

The Remote HMI app allows the Panel Connection favorites that have been created to be saved. The favorite file can then be transferred to other devices and used with other Remote HMI apps installed on the device. There are basically two different methods based on which mobile device is being used.
   a. The app will save the favorites file to the "/Device/Remote HMI" folder

Saving Favorites with Apple iOS devices:

The **iOS** version of the app creates a file.dat" file that stores the favorite **C-more** panel connection settings created by the user. This allows the user to copy, save, or move the favorites from one device to another, or create backup files for when a device may fail or need to be reset. Please refer to the iTunes help for more details on file sharing if needed.

Saving Favorites with Android devices:

The **Android** version of the app creates a ".dat" file that stores the favorite **C-more** panel connection settings created by the user. This allows the user to copy, save, or move the favorites from one device to another, or create backup files for when a device may fail or need to be reset. This file is saved in the Remote HMI folder of the devices memory storage. Use the Android "My Files app on your device to search the folders.

Status Bar: The **Status Bar** is located at the bottom of the **C-more Remote HMI App** workspace and is displayed by default. It can be enabled or disabled by the user as needed from the settings screen. The status bar displays the following information:

The **Status Bar** is located at the bottom of the **C-more Remote HMI App** workspace and is displayed by default. It can be enabled or disabled by the user as needed from the settings screen. The status bar displays the following information:

a. **Receive and Send Indicators:** The indicators blink when data is communicated to and from the **C-more Remote HMI App**. As objects update on the remote **C-more** panel, the **Receive** indicator will highlight in green to show that an update was received by the panel. The **Send** indicator is activated when data is sent from the Client (Remote HMI App) when an input object is pressed. This can be helpful when troubleshooting connection problems.

b. **Active Login Permission Info:** Located in the center of the status bar and displays the login permission level for the account that is presently active. There are three permission levels that can be used for each user account. **View mode, View and Screen Control,** and **Full Control**. These permission levels are stored in each **C-more** panel project and can only be changed by editing the project with the **C-more** programming software. See **Setting up the Remote Access** for additional information.

c. **Connection Time:** This value tracks the time that the **C-more Remote HMI App** has an active connection to the **C-more** panel being viewed. This value will increment when the app connection is running or paused with the control toolbar **Pause** button. It will reset when the connection is stopped with the control toolbar **Stop** button or the connection is lost.