User Manual

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cMT-SVR-100 Startup Guide

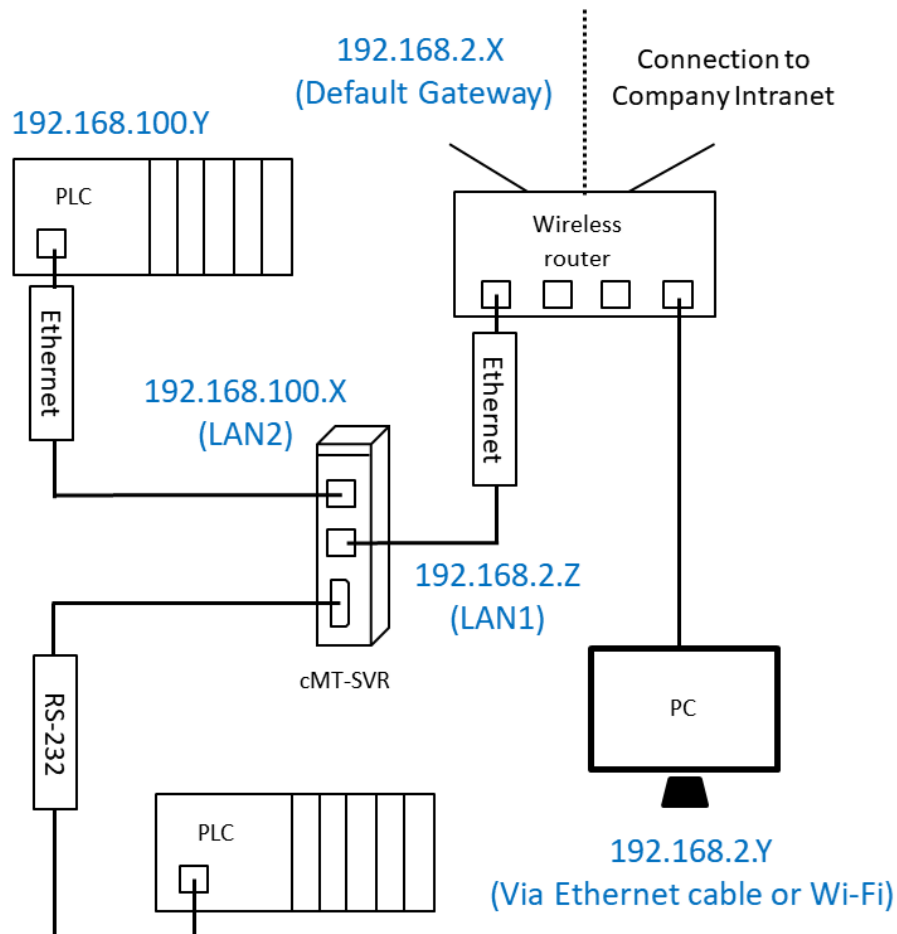Rev. SEP 8, 2020

Table of Contents

1. Network Wiring Diagram

Connect a cMT-SVR to a router via an Ethernet cable as the diagram shows below.

The default IP address of LAN 1 is DHCP. The default IP address of LAN 2 is static IP 192.168.100.1. The IP addresses of LAN 1 and LAN 2 must be configured to different subnets.

cMT-SVR LAN Ports:

cMT-SVR HMI is equipped with two independent Ethernet ports which isolate the device network from the company/factory network. LAN1 is a WAN (Wide Area Network) port which is allowed to connect to a public network or another network via a gateway. LAN2 is a LAN (Local Area Network) port.
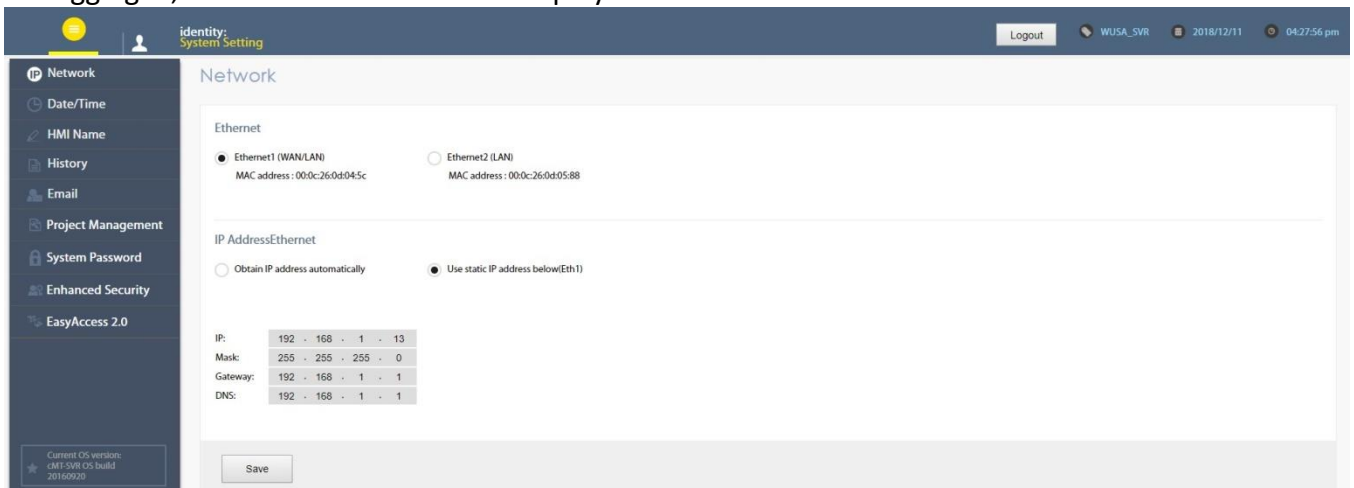
2. Web Interface

A cMT-SVR's setting can be accessed via a web browser. Before configuration, connect cMT-SVR (LAN1) to a router via an Ethernet cable. Open a web browser (IE, Chrome, or Firefox) and enter the IP address of the cMT-SVR. For example, enter 192.168.1.15.
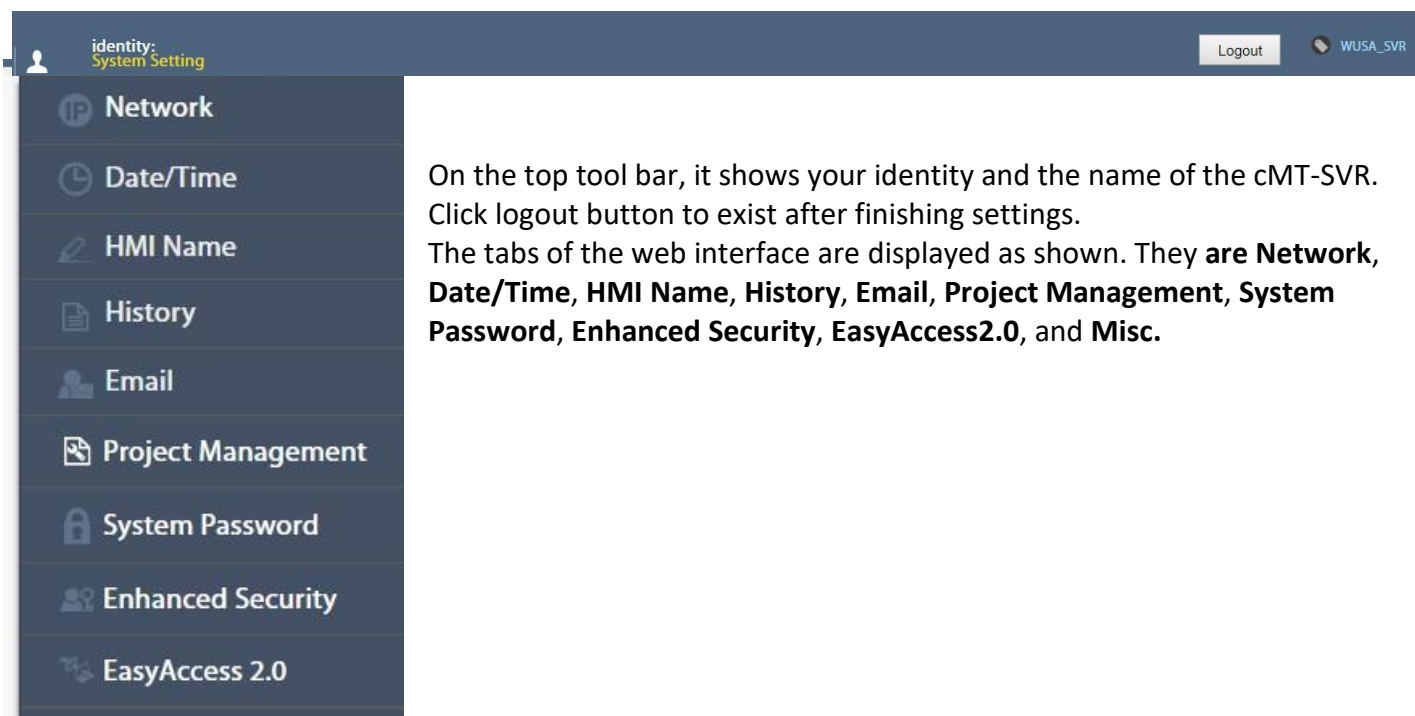
Select an identity and enter its password.

After logging in, the web interface will be displayed as shown.

On the top tool bar, it shows your identity and the name of the cMT-SVR. Click logout button to exist after finishing settings.

The tabs of the web interface are displayed as shown. They **are Network**, **Date/Time**, **HMI Name**, **History**, **Email**, **Project Management**, **System Password**, **Enhanced Security**, **EasyAccess2.0**, and **Misc.**

Network

Set the IP addresses of Ethernet 1 (LAN 1 port) and Ethernet 2 (LAN 2 port). Choose [Obtain IP address automatically] or [Use static IP address below]. If [Use static IP address below] is chosen, enter IP address, mask, gateway IP, and DNS. The IP addresses of Ethernet 1 and Ethernet 2 must be on separate subnets.

[Ethernet1 (WAN/LAN)] - By default, the IP address of Ethernet 1 is DHCP.

[Ethernet2 (LAN)] - By default, the IP address of Ethernet 2 is 192.168.100.1. (**Static IP**)

Date/Time
[Sync with host.] - Synchronizes the HMI RTC with the PC RTC. To confirm the action, click on [Save].

HMI Name
Change the name of the cMT-SVR to identify this HMI when retrieving historical data or loading a project on a PC. This saves time remembering the IP address of each cMT-SVR.
[Identification light] - If clicking this button, the LED on the cMT-SVR will blink.

History
This page is used to clear historical data, recipe, and database information stored in the internal memory of a cMT-SVR.
[Clear]- It is used to clear historical data, recipe, and database information stored in the cMT-SVR. Select boxes that need to be cleared and click on [Clear].
[Backup] - Select boxes to transfer historical data or recipe files from the cMT-SVR to the PC and click on [Download].

Email

This page provides setup of the SMTP server and email contact lists. For more information, refer to section 5.11 **e-Mail** in the Easybuilder pro user manual.

[SMTP]- Enter your SMTP server, port number, user name, and password. Within "Sender information," enter your name and mail address so that the recipients can know where the email comes from.

[Contacts] - Add, update, or delete contact names and contact addresses.

[Update Email Contacts] - Email contacts can be updated via the file created by **Administrator Tools**.

Project Management
This page provides a way to restart the project of the cMT-SVR and restores it to its initial state without cycling power.
[Restart Project] - Restarts cMT-SVR and restores it to its initial state.

[Update Project]- Loads a project and recipes from the PC to the cMT-SVR.
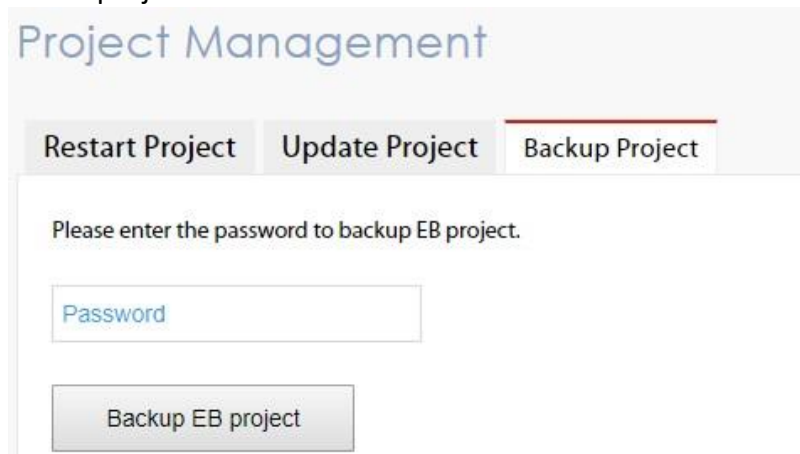
[Backup Project]- Retrieves a project from the cMT-SVR to the PC.

System Password
There are three different levels of password protection, **User, Update Project,** and **System Setting**.
This page is used to change the passwords for operating a project via cMT viewer, loading a project to the HMI, accessing FTP server and so on. The default passwords of the three levels are 111111.
[User]- This level can operate cMT projects via cMT viewer.
[Update project]- This level can load and retrieve the HMI project, as well as retrieve historical data, such as data sampling and event log data. In addition, it can operate cMT projects via cMT viewer.
[System Setting]- This level has access to all system settings, load and retrieve the project, retrieve historical data, and operate cMT projects via cMT viewer. It is the *highest security level*.
[History]- FTP server access. The default password is 111111.
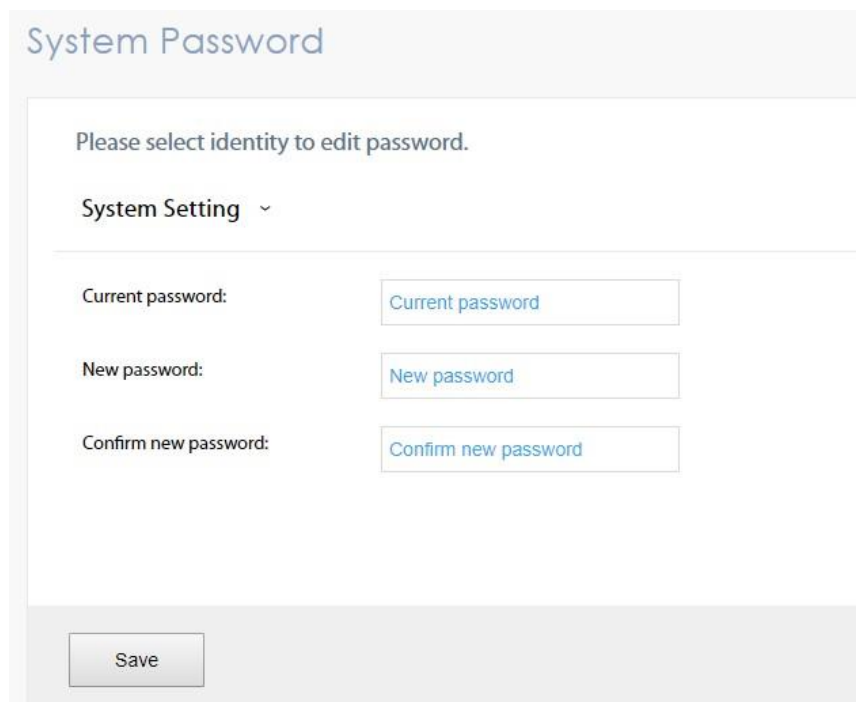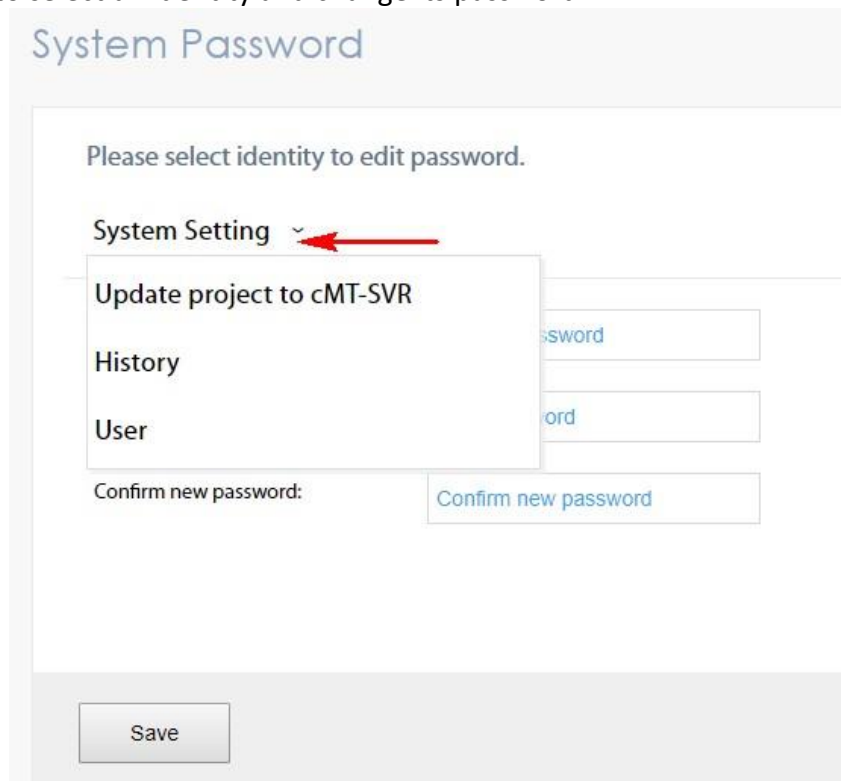
Open the option list to select an identity and change its password.

Password hierarchy -
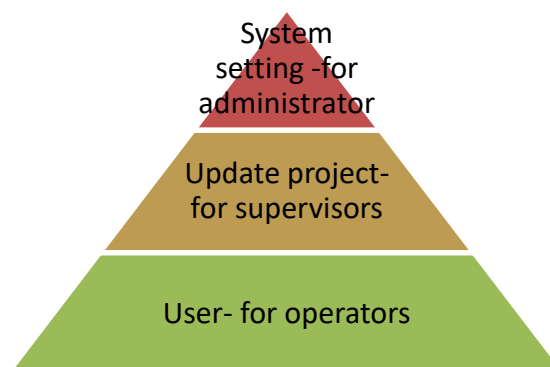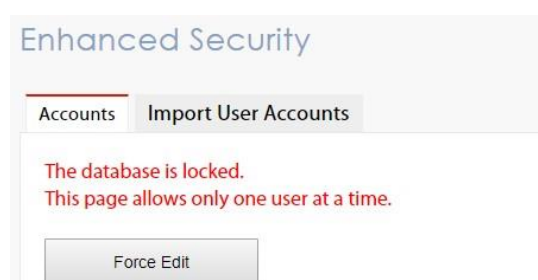
Enhanced Security (Objects authorized to operators in HMI project)
This page provides user passwords and security classes to prevent unauthorized operators from accessing objects that have the potential to cause damage or injury within your cMT-SVR HMI project. For more information, refer to section 5.6.2 **Enhanced Security Mode** in the Easybuilder pro user manual.

[Accounts] -
Click on [Force Edit] to edit user accounts.

Add, update, or delete user accounts.

[Import User Accounts] - User accounts can be updated via the file created by **Administrator Tools**.

EasyAccess2.0.
EasyAccess 2.0 is a tool that allows users to access and control a cMT-SVR remotely from anywhere in the world.
cMT-SVR-100 is NOT a pre-licensed model, so purchasing an activation card is necessary. cMT-SVR-102 is a pre-licensed model.
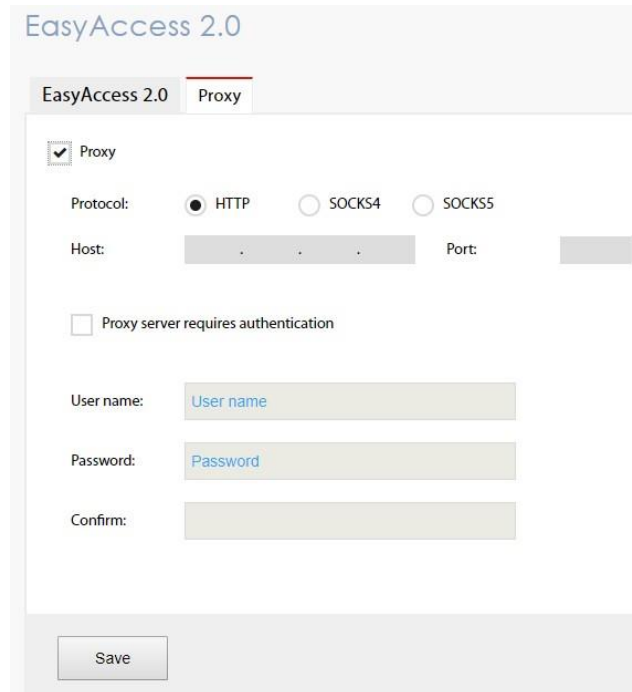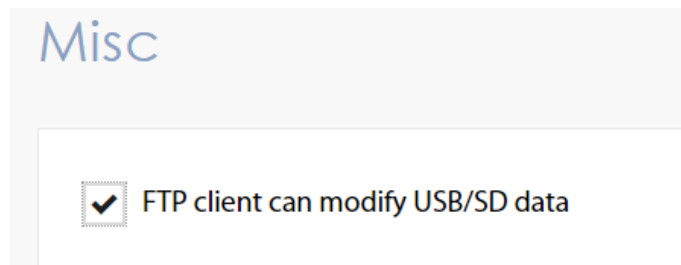
For more information, refer to the **EasyAccess2.0** user manual or **EasyAccess2.0 help website**
https://support.ihmi.net/

Misc
[FTP Client can modify USB/SD data] - If enabled, historical data stored in USB drive/SD card can be modified via FTP(File Transfer Protocol).

3. OS Upgrade

This section shows you how to update the OS image of a cMT-SVR.
1. Copy the MTfirmware.bin file to root folder of a SD card.
2. Flip DIP Switch 2 of the cMT-SVR to ON position.

SW1	SW2	Mode
OFF	OFF	Normal Mode
ON	OFF	Restore Ethernet IP Settings
OFF	ON	Boot Loader Mode
ON	ON	Restore Factory Default

3. To monitor the update progress, run HyperTerminal software on your PC and set the parameters to 115200, 8, N, 1. Connect your computer with the cMT-SVR via COM1 RS-232 port.
4. Insert the SD card to cMT-SVR and reboot to update the OS image. The update succeeds when HyperTerminal displays "Starting Kernel" about **two minutes** after reboot.
5. Power off the cMT-SVR and then flip DIP Switch 2 of the cMT-SVR back to OFF position.

4. cMT-Viewer

cMT-Viewer is a free client application, which can remotely access the screen of the cMT-SVR located on the LAN (Local Area Network) via Wi-Fi connectivity or Ethernet cable connection. To use cMT-Viewer you need to download and install the cMT-Viewer App on a mobile devices or PC. When the cMT-Viewer App runs on a device and connects to the cMT-SVR, only data is exchanged between the device and the cMT-SVR. Three client devices can remotely view and control the project of a cMT-SVR simultaneously by default.

Supported Operating System	Where to Download	Compatibility
Android phones or tablets	Google Play store	V4.1 or greater
iOS devices	App Store	V6 or greater
Windows PC	Weintek USA official website (Stand-alone App. or Easybuilder pro)	Windows 7 or Windows 10

Note: cMT-Viewer is installed with Easybuilder pro package on a PC. To find it, launch Utility Manager » Select [cMT Series] model » [Maintenance] tab » [cMT-Viewer].

Typical Application Diagram
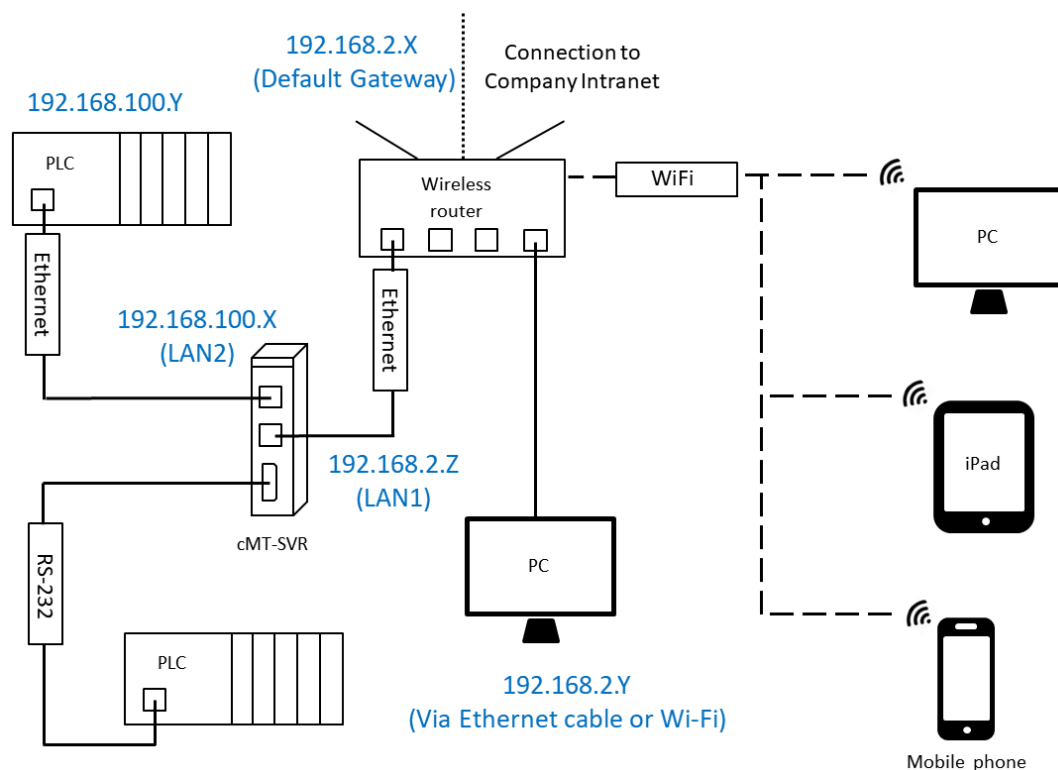
cMT-Viewer App Interface

Some operation options of the cMT-Viewer App opened on different operating systems may vary. This

document discusses how to operate the cMT-Viewer App running on a PC. First, launch cMT-Viewer App.
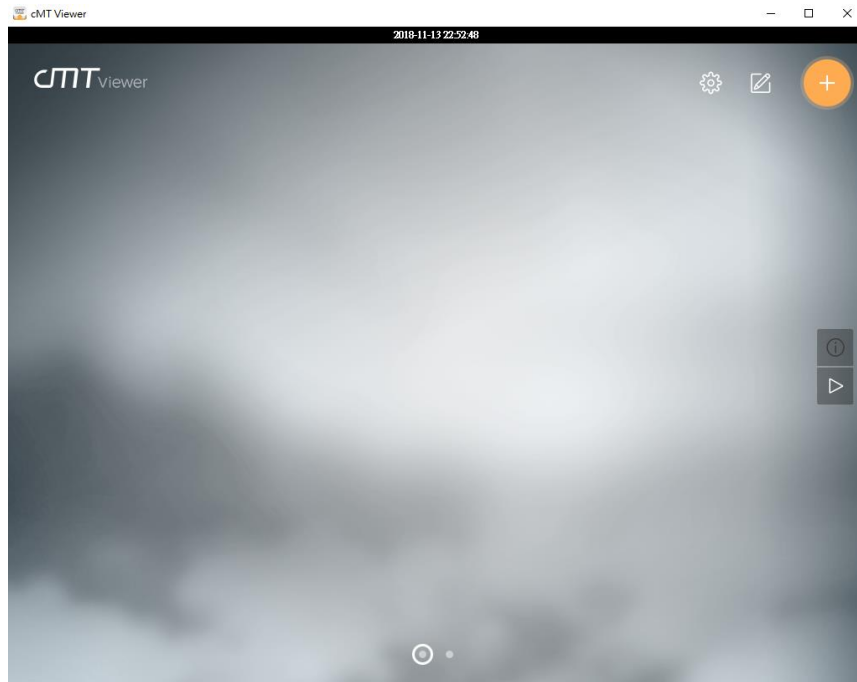
Icon	Name	Function
+	Connect	Allows to open cMT3000 Devices List
✎	Edit	Allows to open page editor
⚙	Settings	Allows to open system settings page
ⓘ	Device Information	Allows to view device information
▷	Auto Play	Allows to auto page switching
◎ ·	Page Indicator	Allows to switch page manually

Note: 1.In this demonstration, version 2.6.38 of cMT-Viewer App is used.

2.Edit, Auto Play, and Page Indicator icons are only present when "Monitor Mode" functionality

is enabled in the [Settings] page.

- **Connect Menu-** Click the Connect button and search for cMT-SVR HMIs on [Search] tab. The

available cMT-SVR HMIs will be shown as below when they exist on your local network. Tap an Add

icon on the desired cMT-SVR, and it will bring up a window requiring a password.
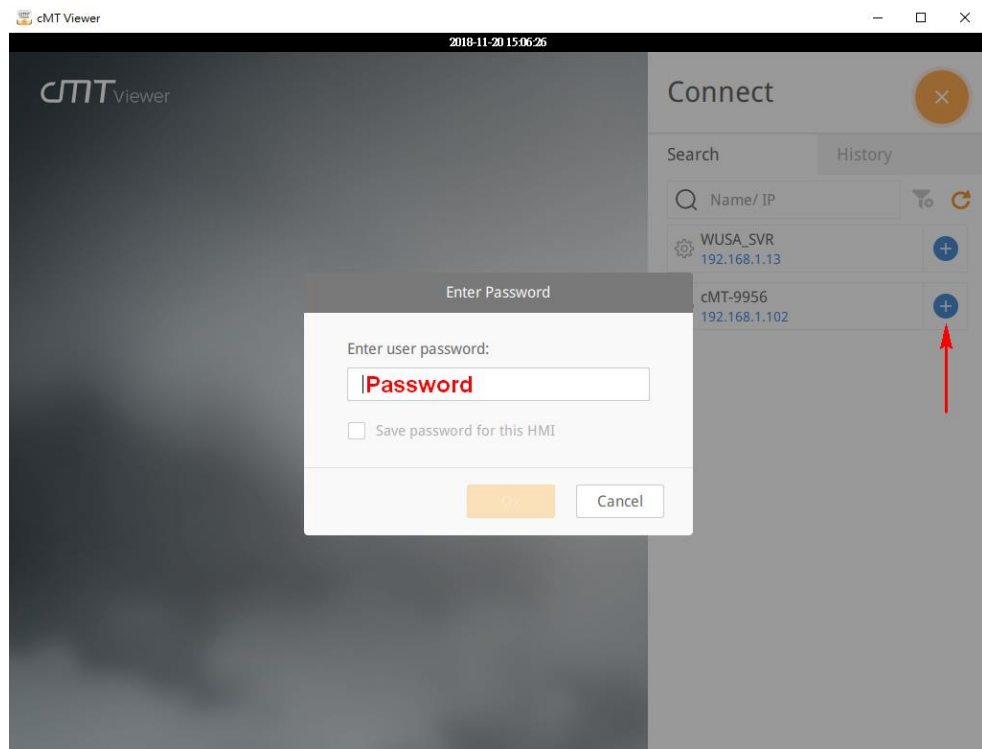
After that, the corresponding project will be loaded. If you want to go back to Connect menu, click on the Start (Home) button at the top left corner.
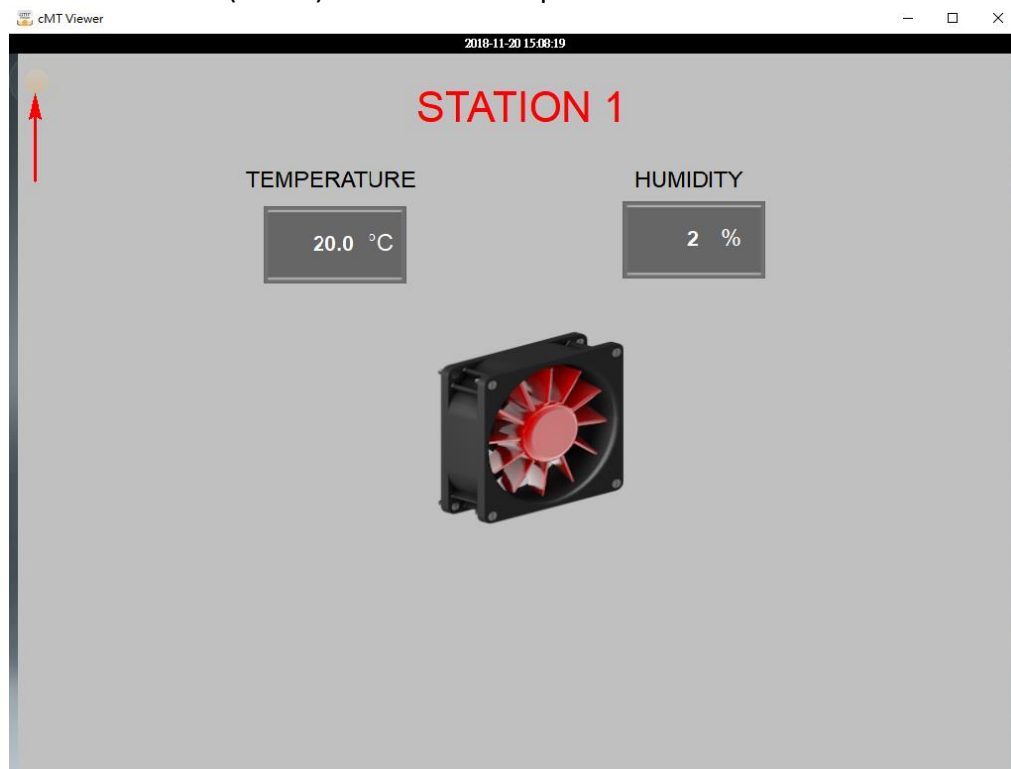
Add a second project to cMT-viewer App to switch and view different projects. The small pictures of the images as shown below are images of the cMT-SVR projects before leaving the projects.
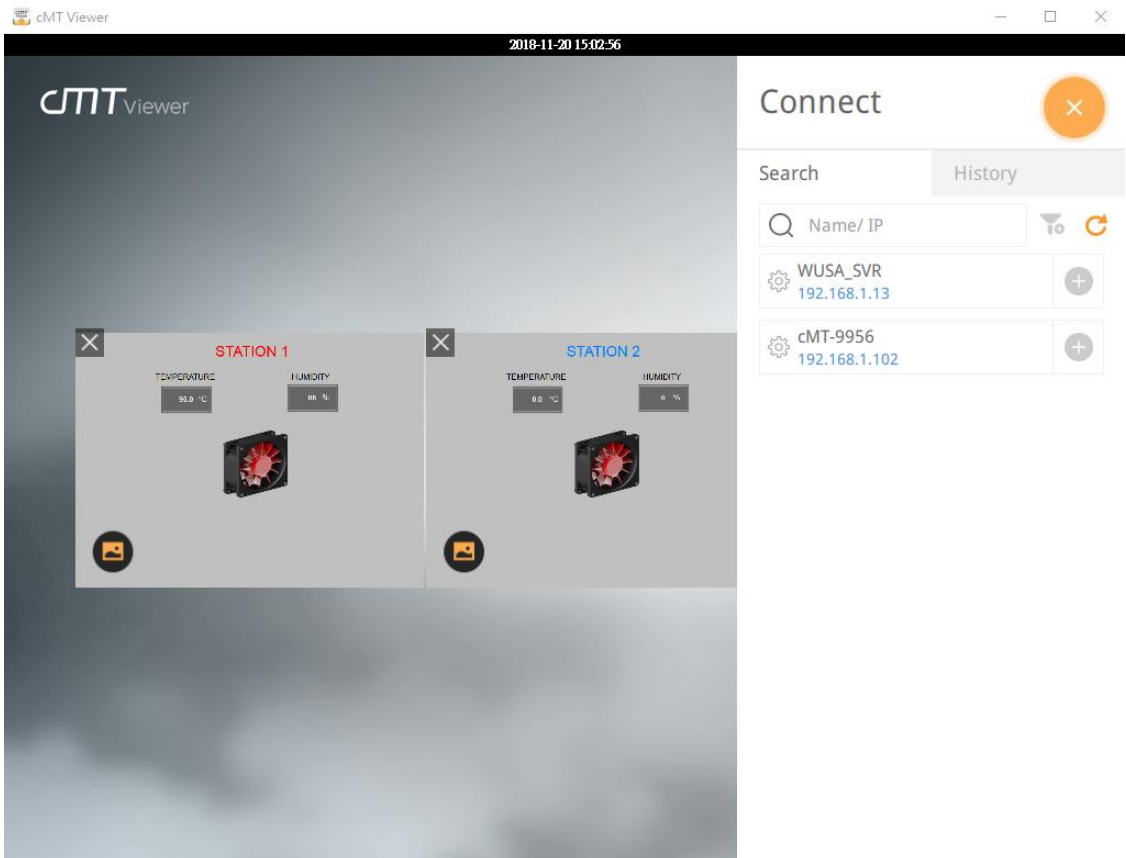
On [History] tab, you can connect the recently accessed projects. If cMT-SVR HMIs are configured to DHCP, the history records may not be usable anymore since the IP addresses are dynamic. Click "clear" button to delete history records if needed. The "gear" buttons nearby each cMT-SVR will open its web interface, allowing you to change the settings of the cMT-SVR.
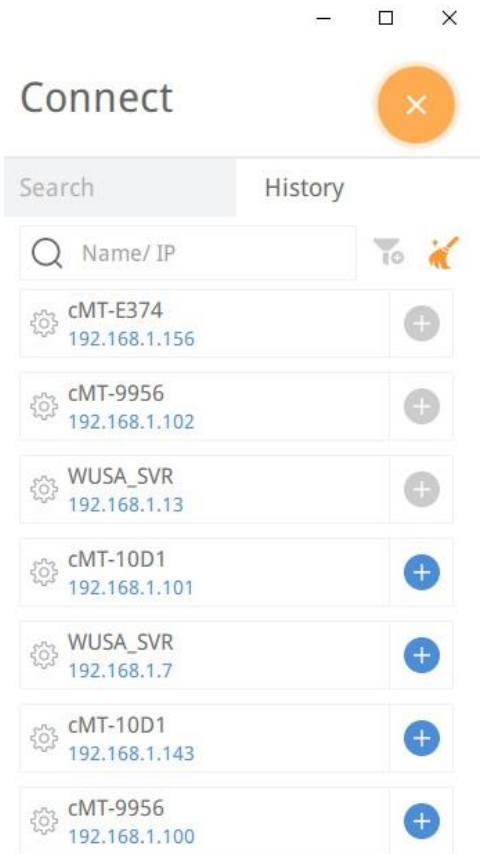
- **Settings Menu** -

[Information] tab: Displays the current version of the cMT-Viewer App.
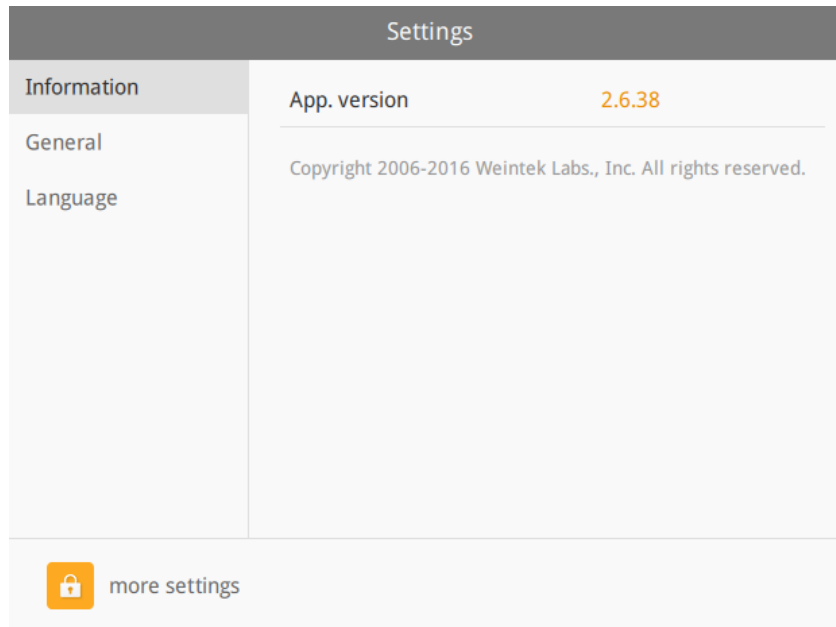
[General] tab: Provides general settings.

> **Change password**- Allows users to change the password of "more settings" at the bottom left corner.
> **Display datetime bar** - Determines if the time bar will be displayed at the top of cMT-Viewer application.
> **Adjust cMT Viewer to windows size** - Adjusts cMT-Viewer to fit the window when users maximize the window of cMT Viewer App.
> **Portrait mode**- Allows you to switch cMT Viewer to Portrait mode.
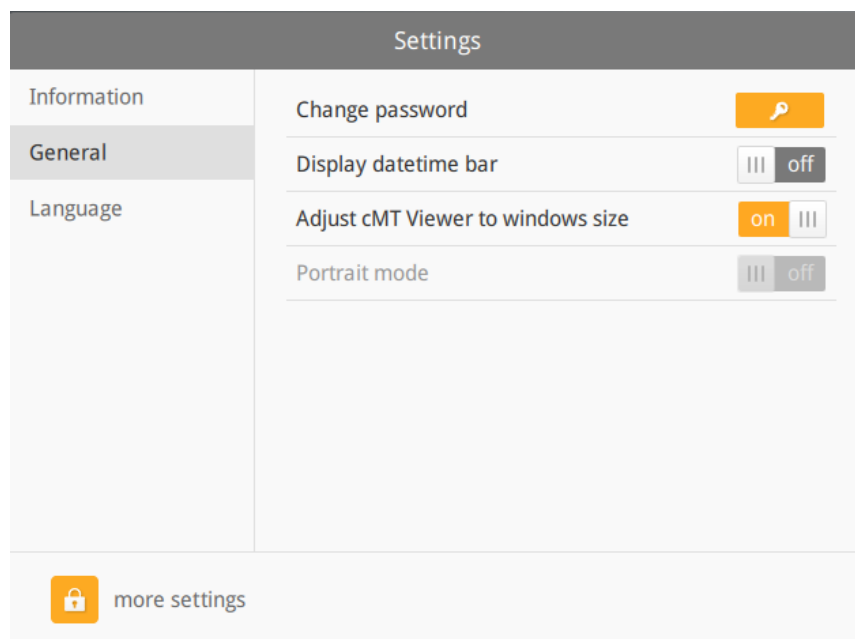
[Language] tab: Select a language for cMT-Viewer menus. The language selected on the project of the cMT-SVR won't be changed by this setting.

To enable Monitor Mode and use Password Protection functionalities, click on "more settings" icon and log in with the password set on "Change password." The default password is 111111.
There are more options available on the **General** tab and the **Password Protection** tab.
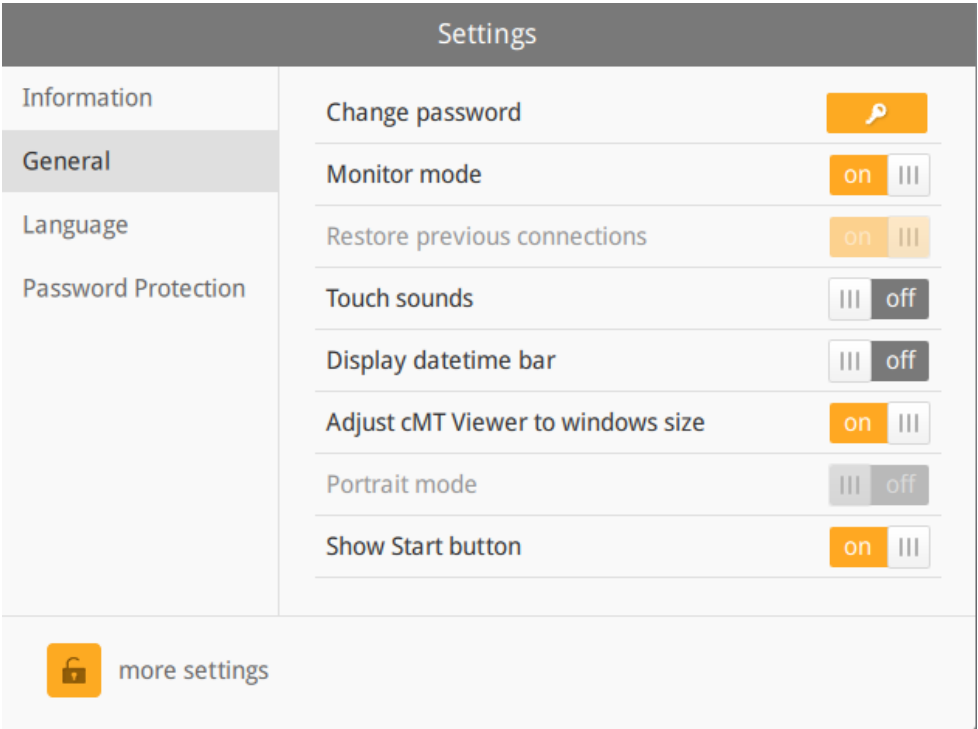
[Monitor mode]- Allows you to display multiple projects on cMT-Viewer and show important real-time data for the projects of each cMT-SVR.

[Show Start button] - If disabled, the "Home" icon on the project will be hidden.
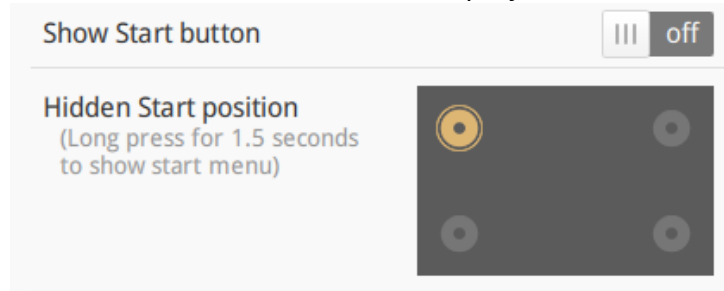
[Password Protection] - Accessing the *protected actions* will require the password if actions are selected below. Specify a password on [Change password] of this page.
Open Project: The action to connect to the cMT-SVR and load its project.
Close Project: The action to close projects on cMT-Viewer.
Server Settings: The action to go to web interface of the cMT-SVR.
Clear History: The action to clear recently accessed projects on the History tab of the Connect menu.
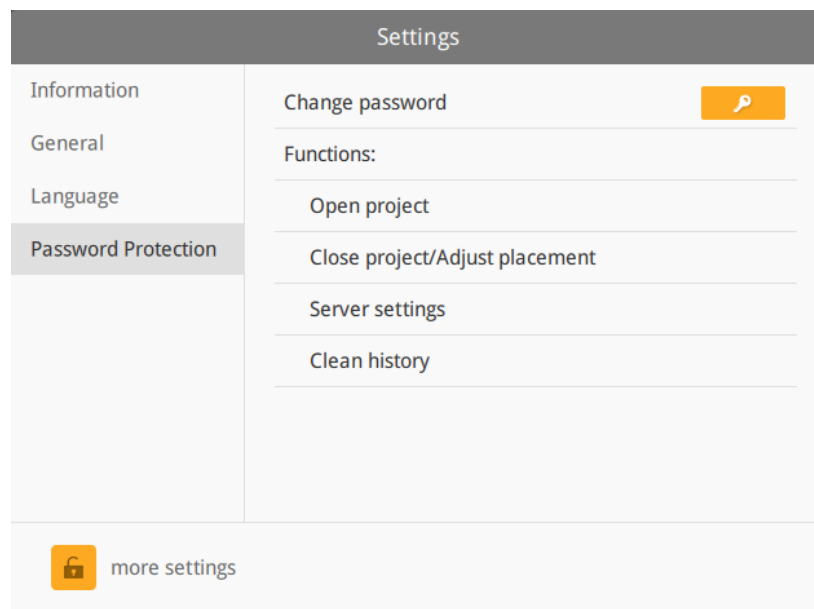
If selecting any actions, the Password Protect icon will be present.
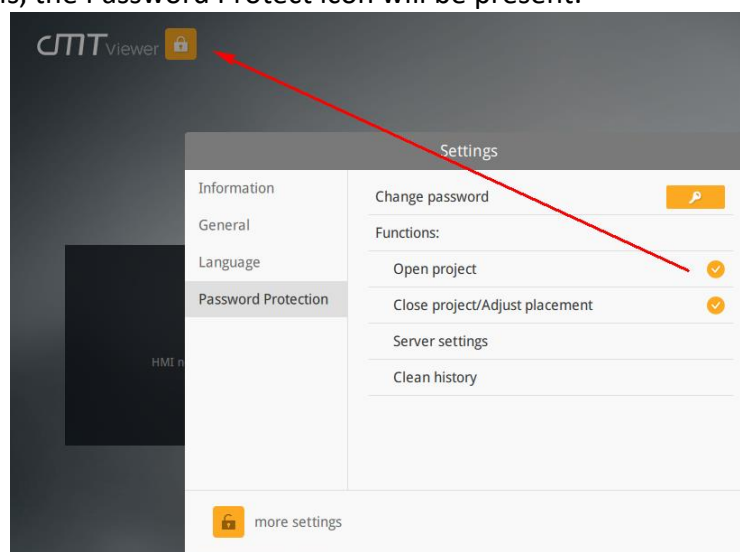
In Password Protection mode, *protected actions* are locked. To access them, click on Password Protect icon and enter the corresponding password.
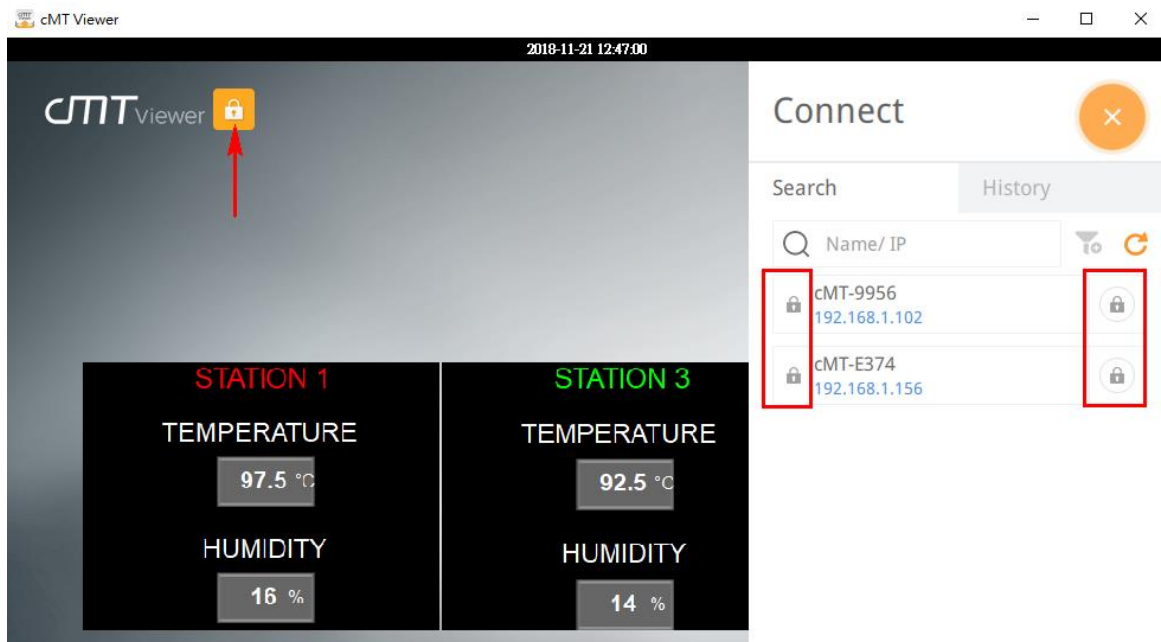
The *protected actions* are accessible to users with knowledge of assigned password. There is a countdown timer displayed as shown below. When the time runs out, Password Protection mode will be activated.
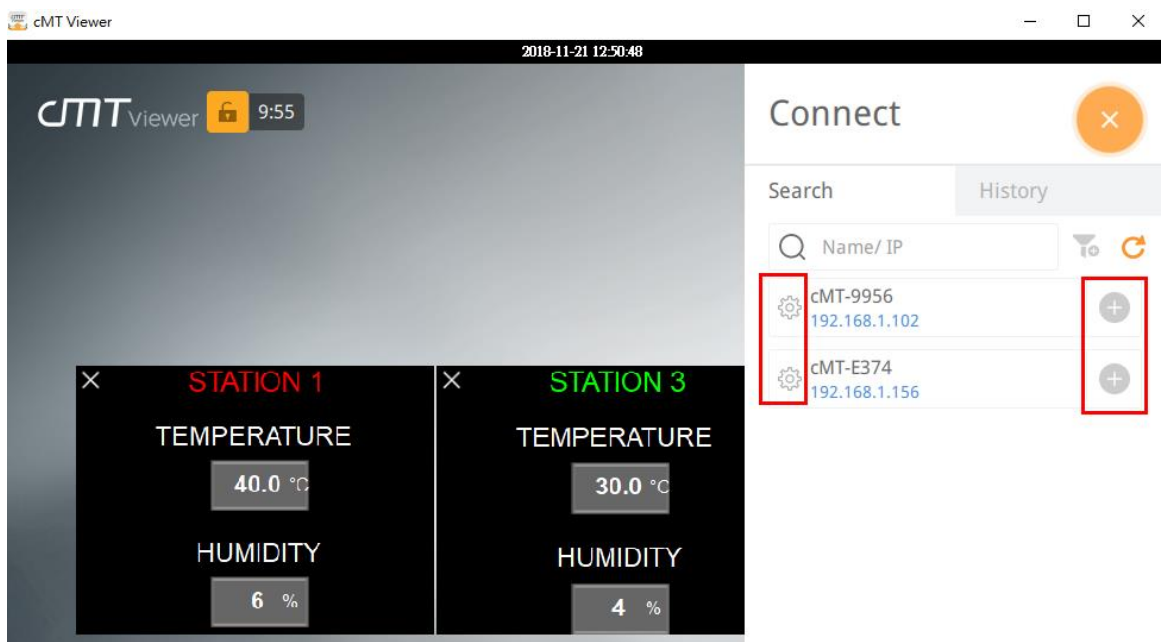
5. Monitor Mode

The small images of the cMT-SVR project as shown below will be updated automatically, so users will see the latest data without entering each cMT-SVR project.

Click on the Auto Play button. cMT-Viewer will automatically go to the next page.
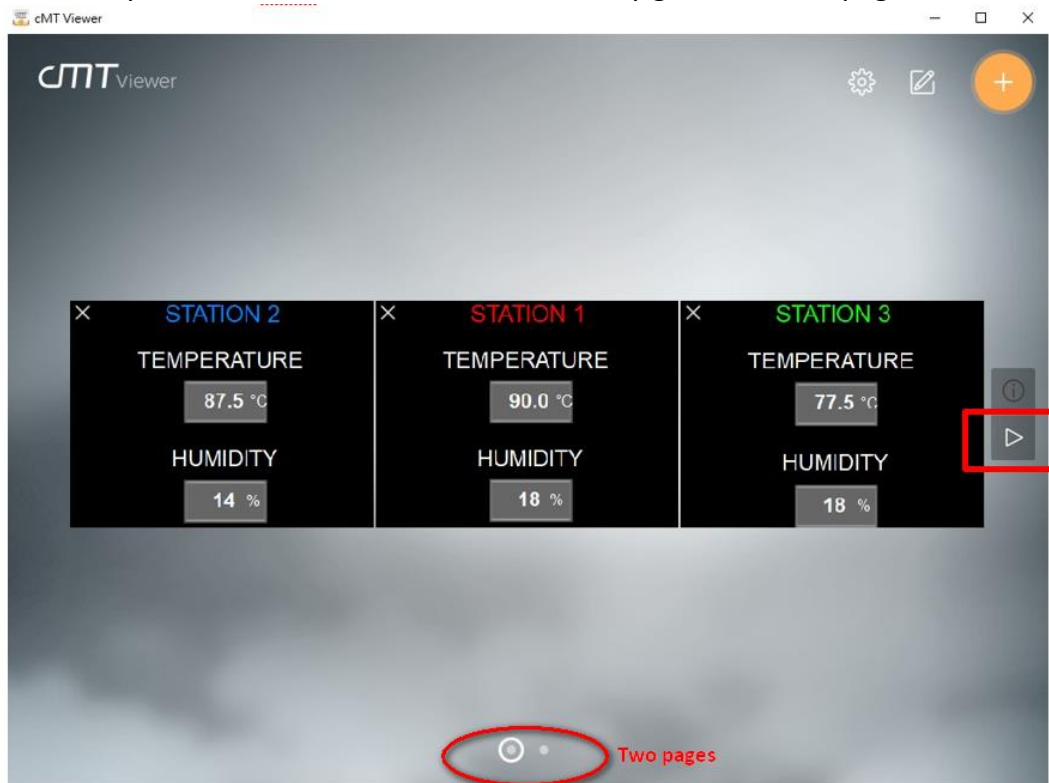
To pause Auto Play mode, click the Pause button highlighted in red.

To leave Auto Play mode, click the Stop button highlighted in orange.
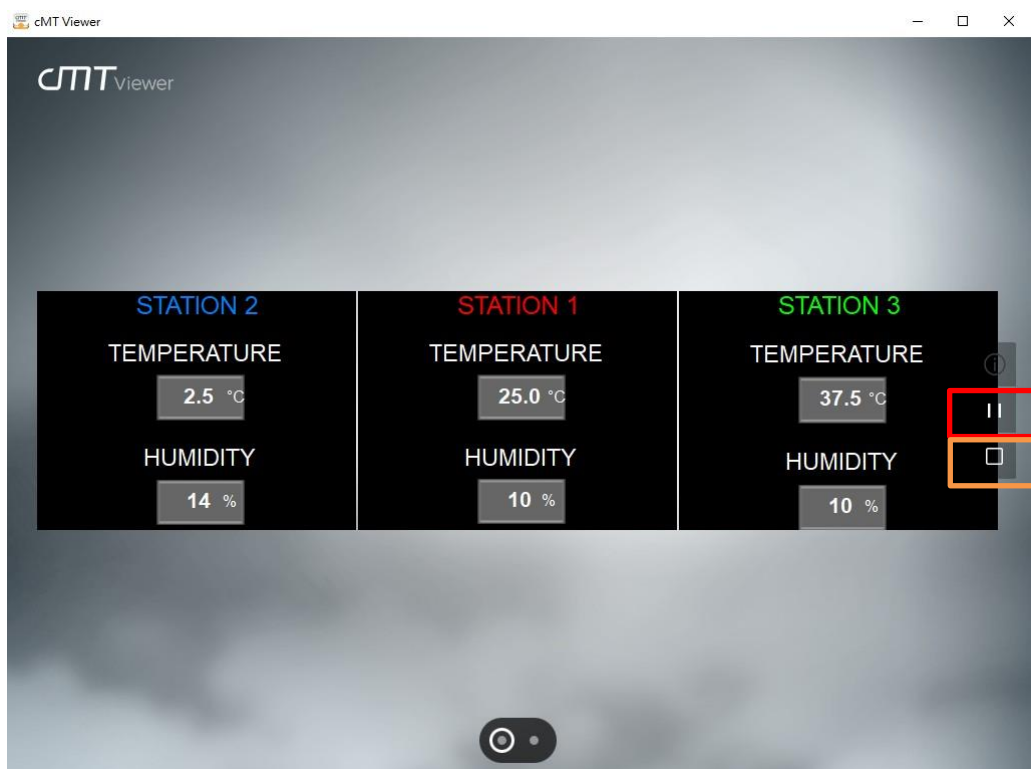
When clicking on the Device Information button, the names of each cMT-SVR, as well as their IP address, will be displayed as shown below. Tap the "Gear" (Setup) buttons to go to the web interface of each cMT-SVR.
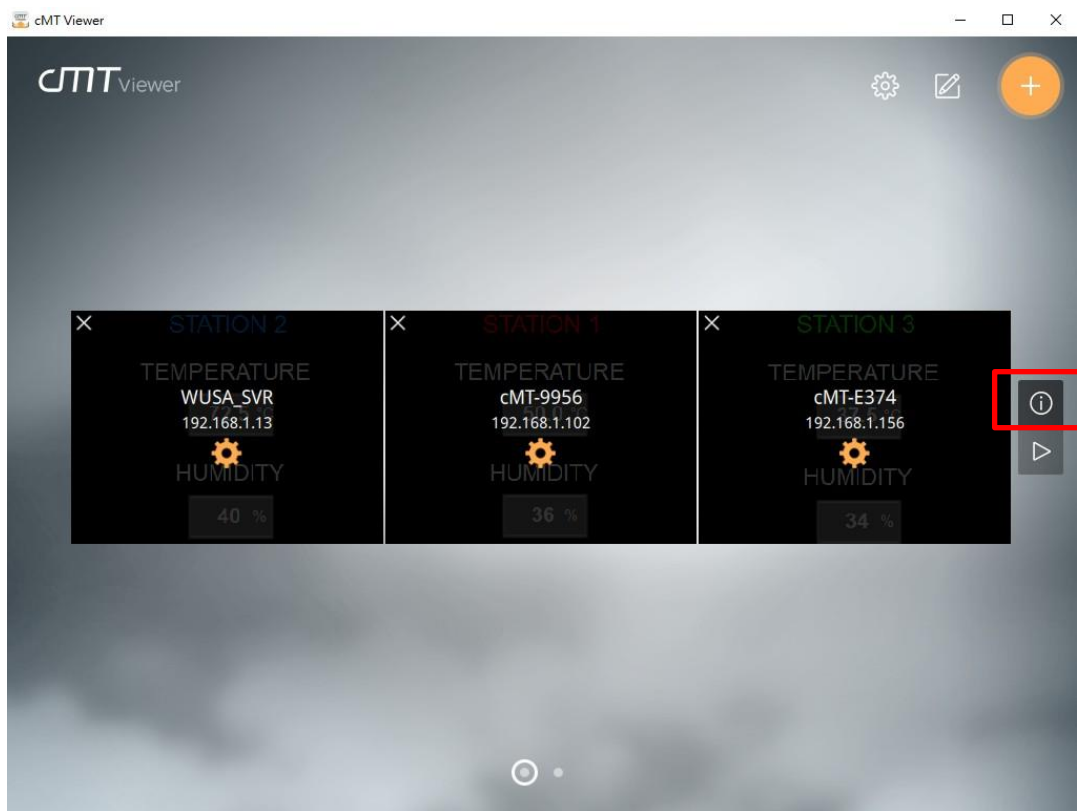
Click the Edit button to configure the page layout.
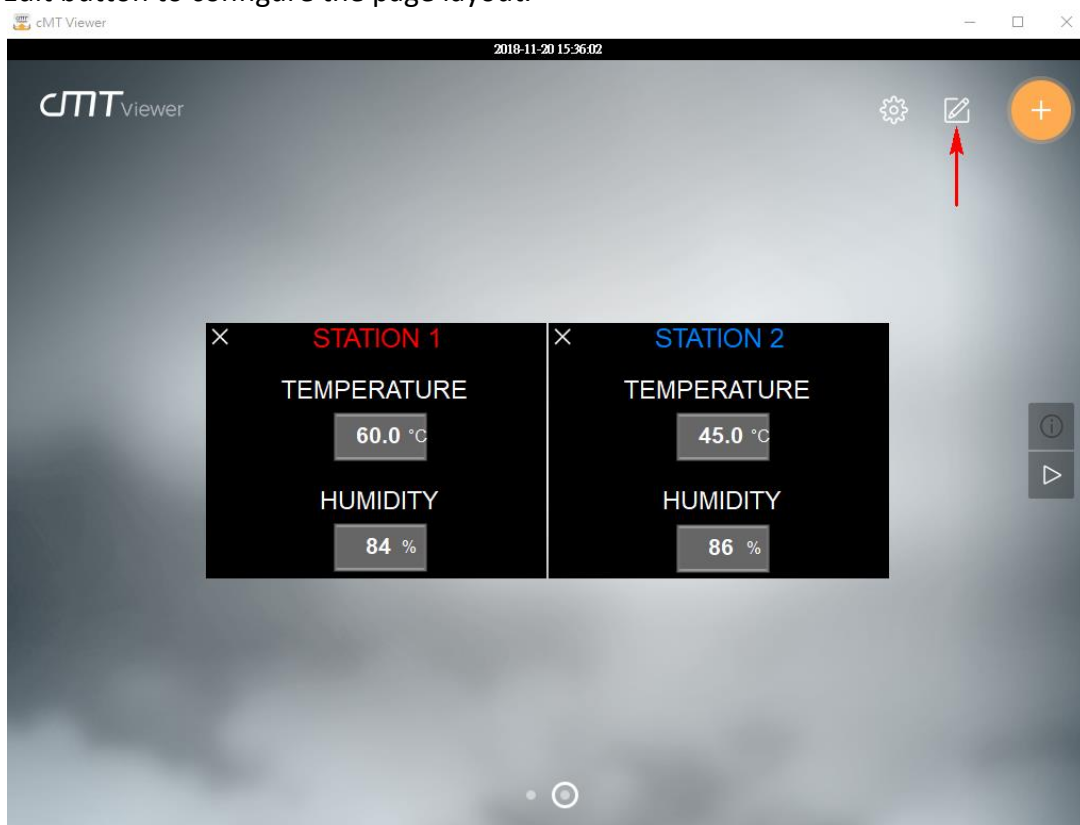
- **Edit Menu -**
  [Page] - Click the Add button to create a new page or delete the current page with the Delete button. Up to 9 pages can be created in each cMT-Viewer.
  [Move the current page] - Switch to the first page, the previous page, the next page, or the last page.
  [Layout] - Set up the maximum number of projects in each page. It provides 3x3(9) format and 5x4(20) format.
  [AutoPlay] - Set up the time interval for Auto Play mode to go to the next page after the given time interval.
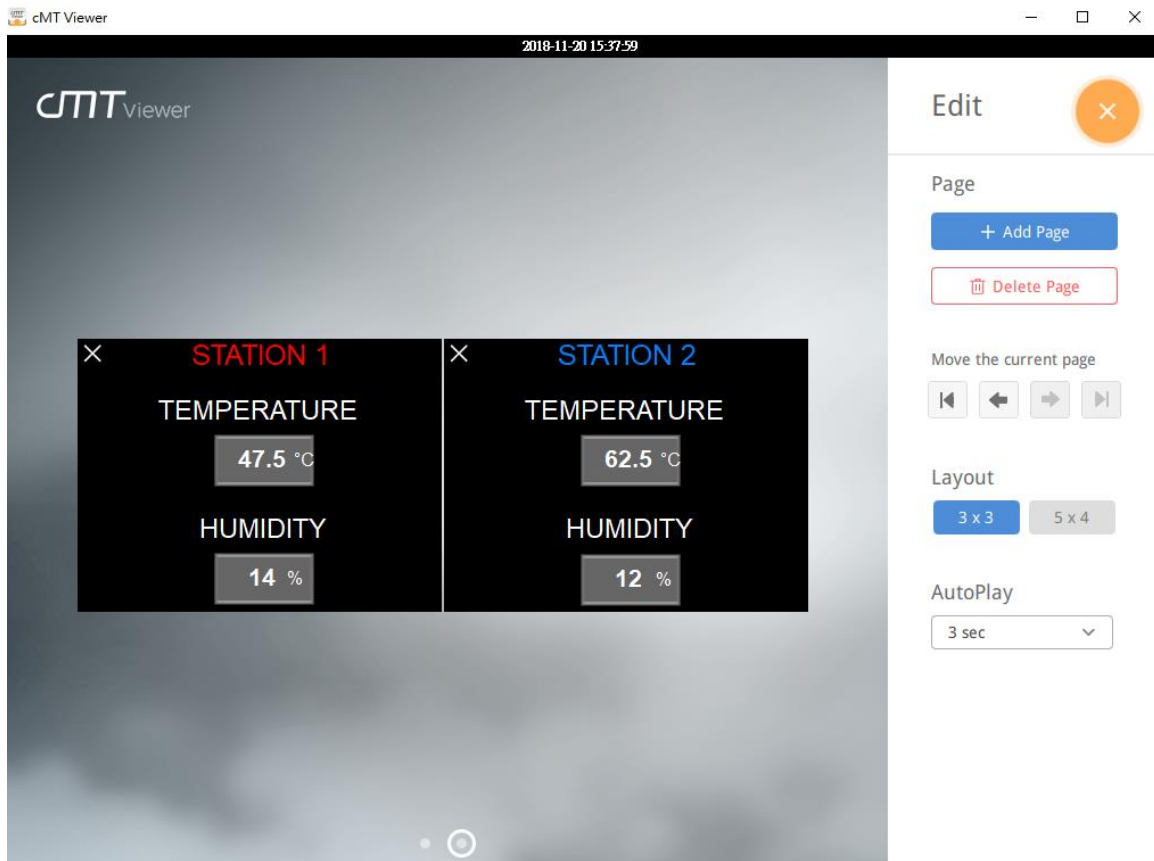
Note: To show real-time data for the project of a cMT-SVR like below, you must enable Monitor Mode in Easybuilder pro and create a screen for visualization. Here are steps to configure.
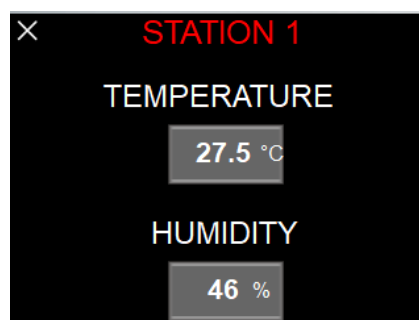
1. Launch Easybuilder pro software v6.01.01 or greater.
2. Create a project of cMT-SVR.
3. Go to the [Home] tab» [System Parameters].
4. In [System Parameters], click on the [General] tab.
5. Enable Monitor Mode checkbox. This option is turned off by default.
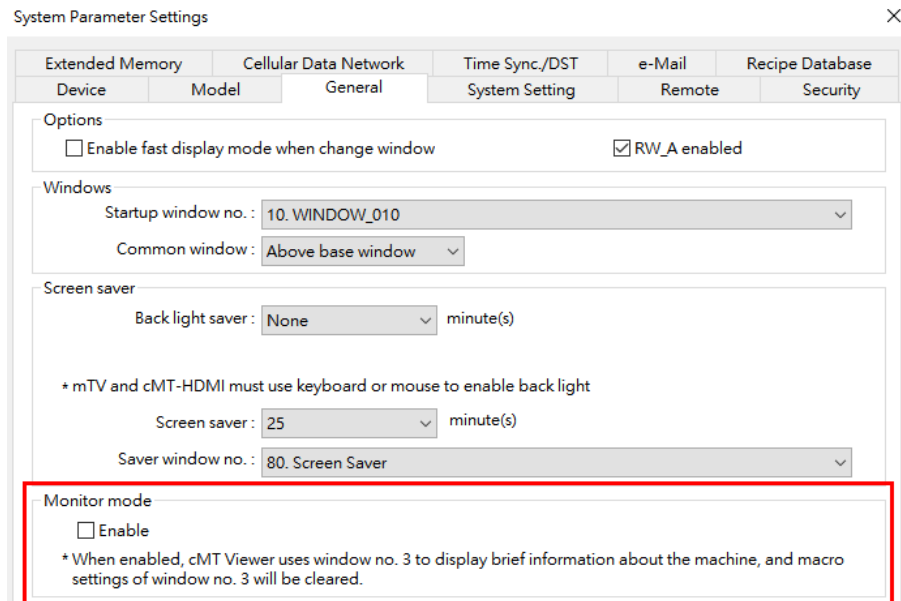
6. Close [System Parameters] settings. Open the window no.3, titled Monitor Mode.
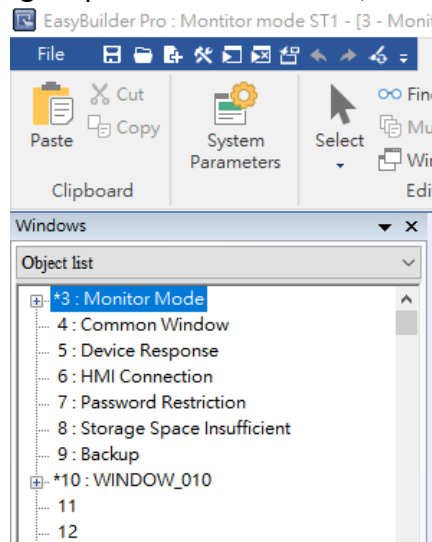
7. Place Text object, Bit Lamp object, Word Lamp object, Numeric Display object, ASCII Display object, Bar Graph object or Alarm Display object to show up-to-date data on this screen, so you can see the data shown and updated on the cMT-Viewer App while in monitor mode.
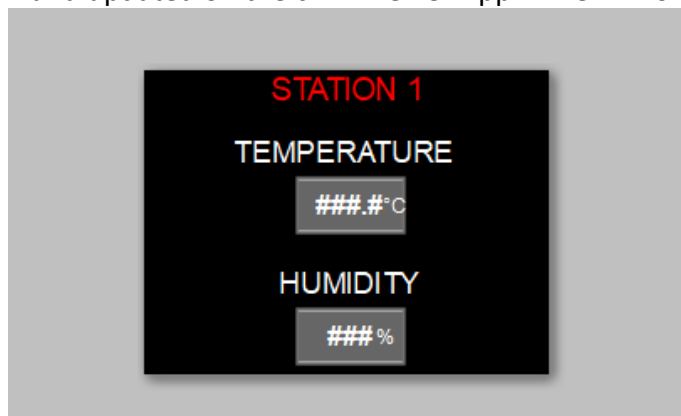
8. Download this project to a cMT-SVR.

6. cMT-Viewer Limitations

Feature Limitation

Some features do not work on a cMT Viewer client (PC, iOS, Android, cMT-iV5), even if they work on the local cMT HMI. Please take this into consideration when programming projects.

Features (Objects) that do not work remotely on cMT Viewer App are listed below.
- File Browser
- Media Player
- Video In: USB Camera
- Video In: IP Camera
- Video In: Video Input (analog)
- Picture View
- PDF Reader
- VNC Viewer
- Selected features of Function Key: Screen hardcopy, Import user data/User [USB Security Key]
- Selected features of PLC Control
   i.   Screen hardcopy: Files are saved in the external drive on HMI
   ii.   Backlight: Backlight control of HMI screen

- Selected features of Operation Log
   i.   Operation Log printing: Logs are saved in the external drive on HMI

Above objects won't be displayed on a cMT Viewer App.

Maximum Connect Count

Three cMT-Viewer clients are allowed to remotely view and control the project of a cMT-SVR simultaneously by default. When the fourth cMT-Viewer client connects to the cMT-SVR, the warning message as shown below will pop up and reject the connection.
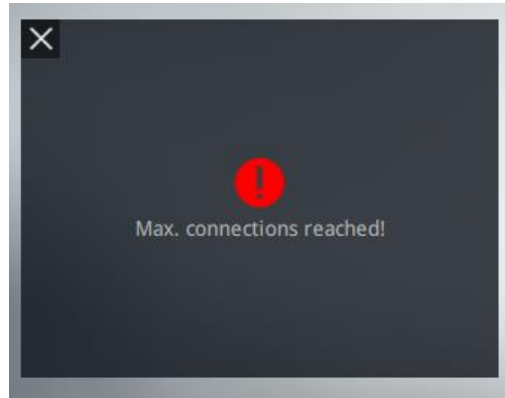
The maximum capacity can be adjusted in Easybuilder pro software. Here are the steps.

 1. Launch Easybuilder pro v6.01.01 or greater.

 2. Go to the [Home] tab » [System Parameters].

 3. Click on the [Remote] tab.

 4. Within cMT-Viewer, set up the number of cMT-Viewer max connections. Up to 10 cMT-Viewer clients

   are allowed to connect to one cMT-SVR.
   Warning: Allowing a number of cMT-Viewer connections up to 4 or over will affect HMI performance. Please take this into consideration when programming projects.
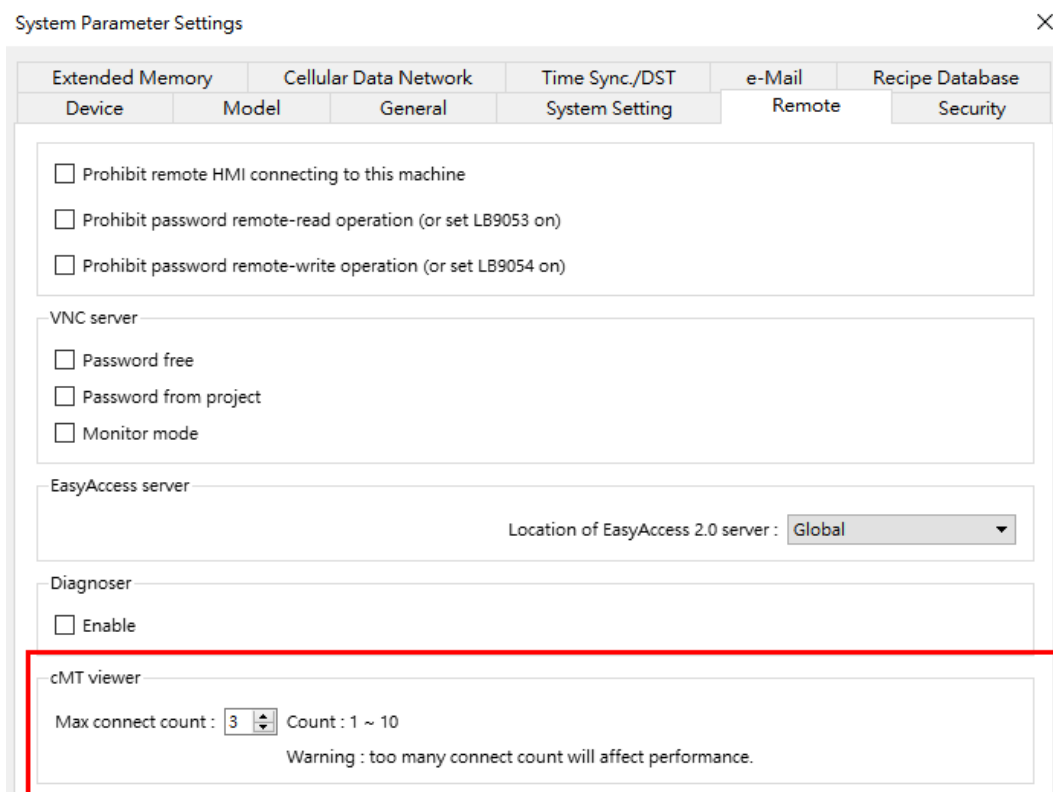
7. cMT Objects Introduction

Basic objects (Features):

Bit type object

- [Bit Lamp] displays the state of a designated bit. If the bit state is OFF, the State 0 shape will be displayed. If the bit state is ON, the State 1 shape will be displayed.
- [Set Bit] triggers a designated bit address to change the state to ON or OFF when the object is touched.
- [Toggle Switch] is a combination of *Bit Lamp* object and *Set Bit* object.

Word type object

- [Word Lamp] displays the state with a shape according to the value of a designated word register.
- [Set Word] changes the value in a designated word register when the object is touched.
- [Multi-state Switch] is a combination of *Word Lamp* object and *Set Word* object.
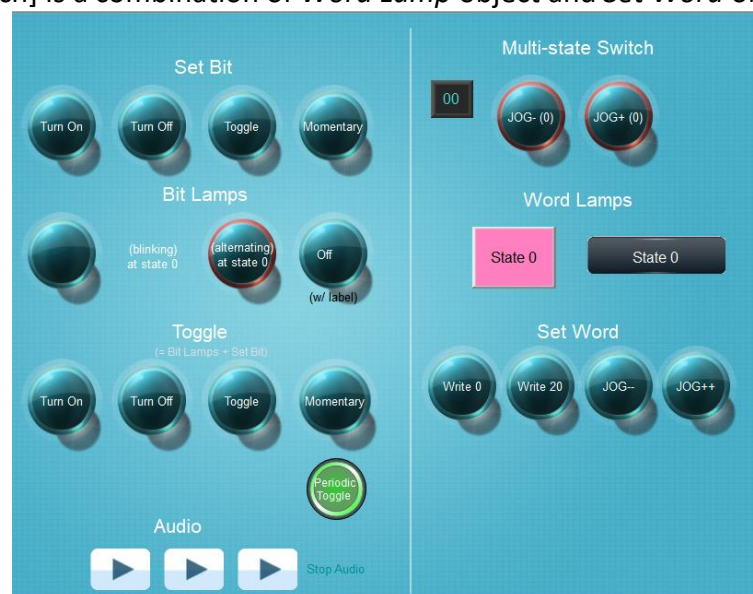
- [Combo button] allows operators to execute multiple commands with one object, including bit and word register.

- [Numeric] can be used to input or display the value of a designated word register.
- [Ascii] can be used to input or display ASCII or UNICODE characters held in designated word registers.

- [Bar Graph] displays the value of a designated word register with a bar graph.
- [Slider] will change the value of a designated word register when operators move the tick of the Slider object.
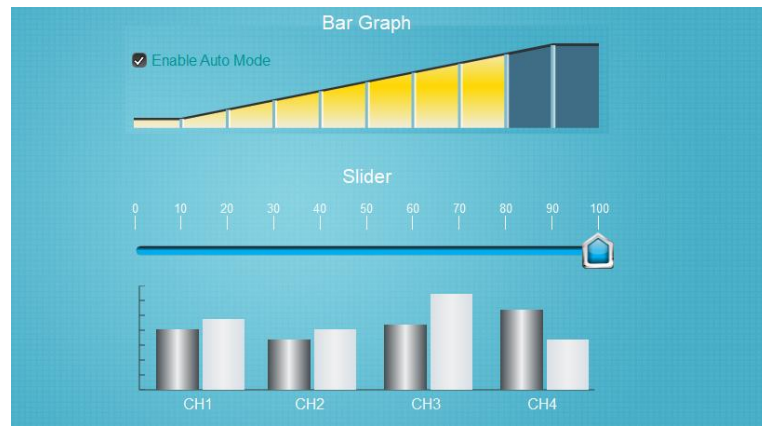
- [Meter Display] displays the value of a designated word register with a meter.

- [Moving Shape] is an object defined by the states and tracks of a program developer. The state and the location depend on consecutive word registers.
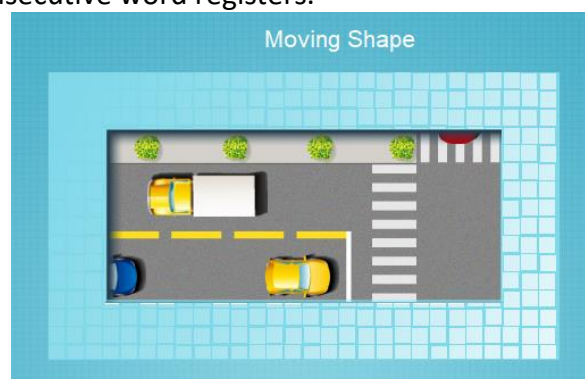
Other basic objects -

- [Option List] displays a list of items that can be viewed and selected. Once an item is selected, the specified value will be written to a designated word register.
- [Scheduler] turns bit ON/OFF or writes values to word registers at designated start times. It works on a weekly basis.
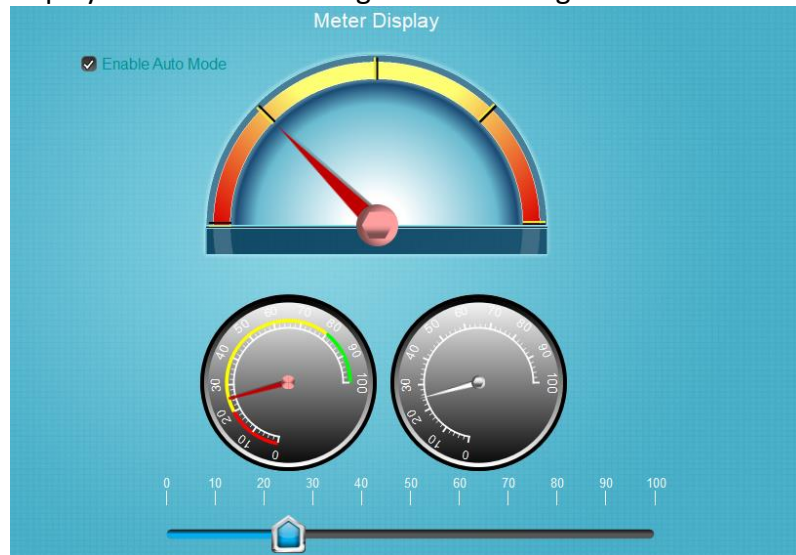- [Timer] turns bit ON when time reaches set point.
- [PLC Control] executes task when it is triggered.

- [Pie Chart] draws a pie chart that divides a circle into several slices to illustrate proportion, according to the value of a designated word register.
- [Function Key] provides several functions, such as switching to another page, opening a pop-up window, keypad design, Macro execution and so on.
- [Direct Window] (Controlled by *bit*) - Operators can open or close a pop-up window by a designated *bit* at the predefined location.
- [Indirect Window] (Controlled by *word register*) - Operators can open or close a pop-up window by a designated *word register* at the predefined location.
  Note: The background transparency of Direct Window and Indirect Window is adjustable in the HMI program.

Multi language supported- Up to 8 languages can be added to the project of the cMT Series HMI.
Use the language menu (System register LW-9134) to select a desired language for the project.
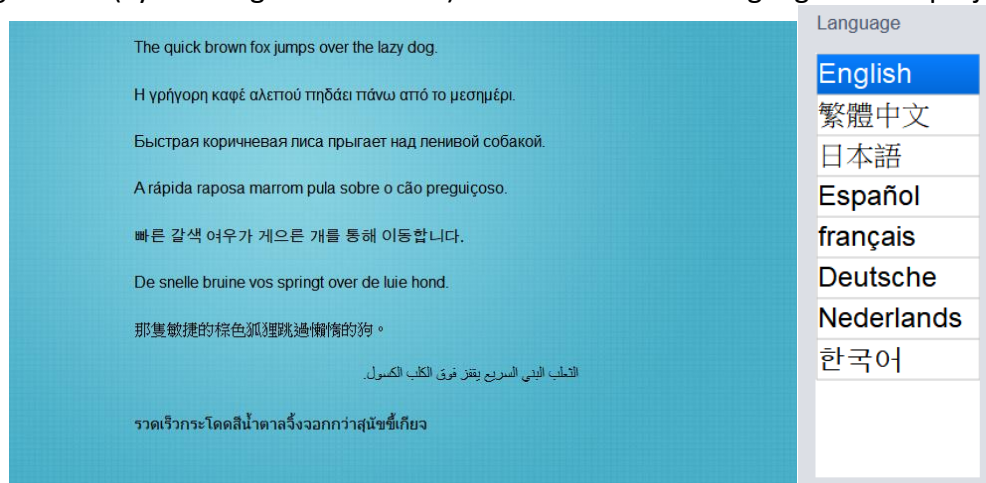
Enhanced Security (Objects protected) - Up to 11 users can be set in an HMI program, and one Admin user has all privileges and can operate all object classes. User passwords must be alphanumeric, and each user can have up to 12 classes (A to L).
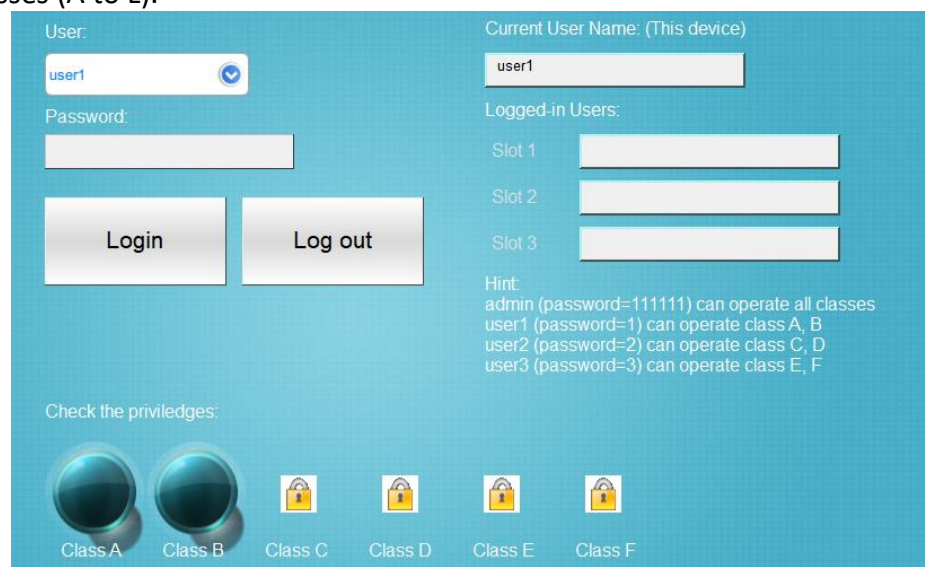
Recipe Database - Allows operators to view, add, update, delete, and use recipes.

Application

This demo program demonstrates the application for a boiler system.

Overview page

[Flow block] displays the flow speed in a pipe or the speed in a transportation line.

Trending chart page

[Trend Display] displays data in a chart. The data must be predefined in Data Sampling object (Data logger).
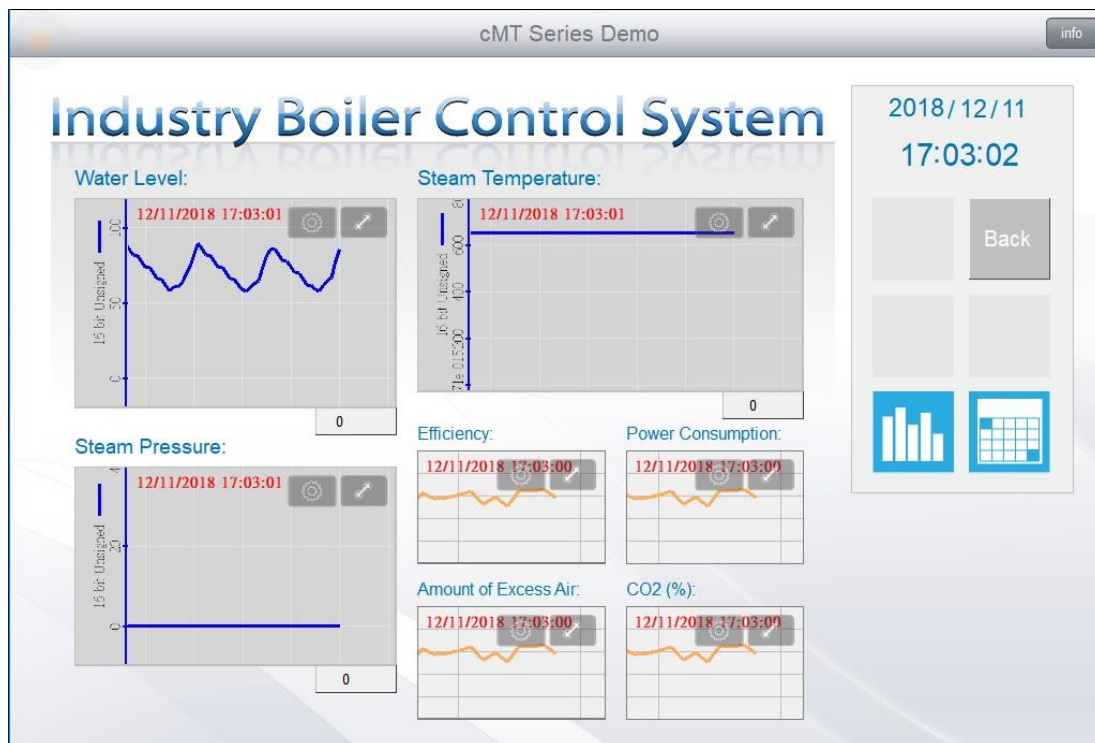
Alarm page

[Alarm Display] displays latest alarm messages which are predefined in Event Log object (Event detector) and have met a trigger condition.

[Event Display] displays latest and historical alarm messages which are predefined in Event Log object (Event detector).

8. cMT-SVR Gestures Operation

Tap: This is the most common gesture. Briefly touch HMI screen with fingertip.
Drag: Move fingertip over HMI screen without losing contact.
Press: Touch HMI screen for extended period of time.
Pinch: Touch HMI screen with two fingers and bring them closer together.
Spread: Touch HMI screen with two fingers and move them apart.

On cMT Viewer APP or capacitive touch screen:

Gestures	Supported Objects (Features)
Tap	All "Input" objects *1
Drag (Scroll horizontally, scroll up, and scroll down on the object to view more data)	Data log: Trend Display, History Data Display Event log: Event Display, Event Bar Chart(Gantt) Operation log: Operation Log View Recipe: Recipe View SQL: SQL Query Result Viewer Others: Option-List, Data Block Display
Press	This gesture can be configured on the property of the object in HMI program if needed.
Pinch	Data log: Trend Display
Spread	Data log: Trend Display

*1 Input objects refers to objects that are allowed operators to open a window as well as pop-up window, press a button to turn bit ON/OFF, or enter a value to a word register.

Note:
1. cMT-SVR doesn't support page switching by drag and flick gestures.
2. For more information about *Press*, refer to section 10.5 **Object Security Settings** in the Easybuilder pro user manual and see "Min. press time (Sec)."

Reference Link:

Weintek Labs website: http://www.weintek.com

Founded in 1996, WEINTEK LABS is a global-leading HMI manufacturer and is dedicated to the development, design, and manufacturing of practical HMI solutions. WEINTEK LAB's mission is to provide quality, customizable HMI-solutions that meet the needs of all industrial automation requirements while maintaining customer satisfaction by providing "on-demand" customer service. WEINTEK LABS brought their innovative technology to the United States in 2016, WEINTEK USA, INC., to provide quality and expedient solutions to the North American industrial market.

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