格斯科技股份有限公司
GUS TECHNOLOGY CO., LTD

# 15kWh LTO Home Energy Storage System

# User Manual

**GUS Patented Cabinet Design Concept**

Using the 19-inch industrial standard cabinet as the design foundation, the home energy storage system is elevated into a stylish yet functional home decor piece. It allows the application of green energy to become a trendy part of residential furnishings.

The exterior of the cabinet modifies the traditional rigid steel structure, featuring a double-open front door design, which increases the flexibility of spatial application. The cabinet, finished in black baked paint, presents a simple and elegant style, capable of integrating with various decor arrangements. The circular vent strips on the top and bottom panels enhance the visual depth of the cabinet, while the gradually perforated design provides a multi-layer visual perception and improves thermal efficiency. The front door is equipped with a touch-controlled liquid crystal display, enabling users to easily monitor the battery status.

---

# 1. Introduction

The GUS Technology Home Energy Storage System is a 15 kWh capacity storage solution that includes fast charge and discharge management, battery status display, and various protection management systems

# 2. Safety Precautions

<Warning>

Please read this manual carefully before operating.

The battery should be installed indoors, away from water, high temperatures, mechanical force, and fire. Do not use in environments outside of the specified conditions or where hazardous substances are present.

Avoid contact with corrosive substances and keep the battery away from fire and heat sources. The battery capacity upon shipment from the factory is approximately 30% to 50%.

Do not place any heavy objects on top of the battery.

The battery should be fully charged and discharged at least once every 6 months.

For batteries not in use for extended periods, turn off the power and fully charge and discharge the battery every 6 months.

Batteries that will not be used for more than 1 month should be stored indoors in a clean, dry environment with a temperature range of 0°C to 35°C.

Do not install the battery in environments with temperatures lower than 0°C or higher than 50°C, or where

humidity exceeds 85%.

Do not remove the protective cover from the positive and negative terminals of the main power supply at the bottom of the chassis.

If the device’ s red warning light is on, refer to the related message GUS on the mobile app, cease any further operation, and immediately notify GUS Technology (contact information can be found in Section 12). Do not disassemble, move, or modify any part of the battery without authorization from GUS Technology.

# 3. Product Appearance and Contents

## 3-1. Appearance

### W×H×D (645mm×1665mm×945mm)

## 3-2. Contents

a. Cabinet ×1

b. Main control chassis ×1

c. Standard 4U chassis ×6

d. 3" display ×1

e. User manual ×1 (available for download on the official website)

f. Front door keys ×2, side panel keys ×2

g. Accessories pack ×1

# 4. Product Unit Description

### 4-1Cabinet

a. Designed with standard industrial specifications, it can accommodate up to 30U chassis.

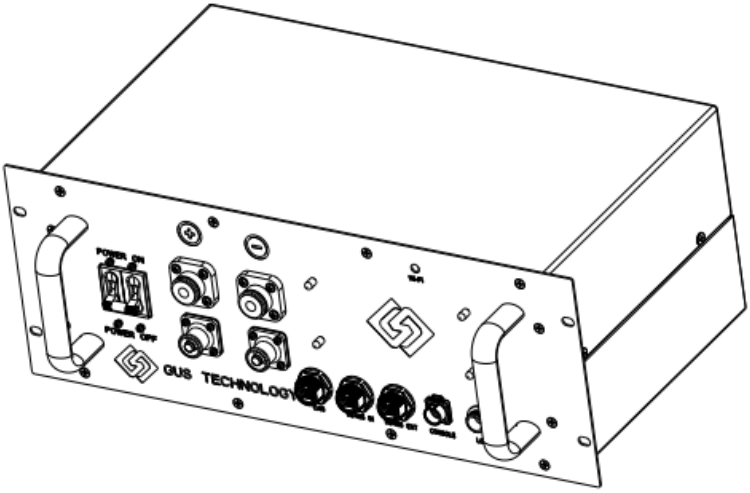
b. Both sides feature a gradual circular perforation design, integrating with the overall style and providing heat dissipation functionality.

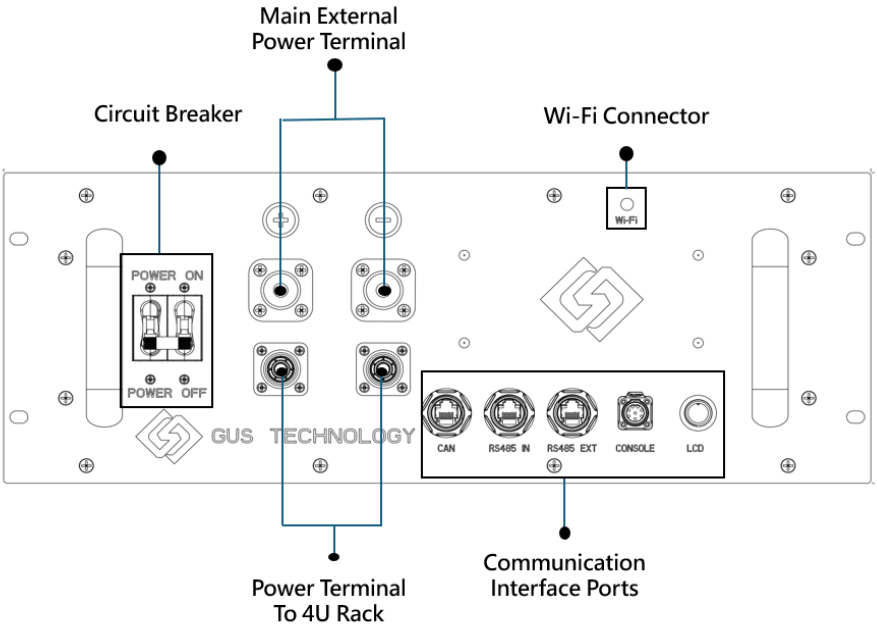
c. The front door on the right side of the cabinet is equipped with a display to show the system status.

d. The front door of the cabinet is secured with a dedicated key to prevent accidental opening or contact.

e. The cabinet dimensions are W×H×D (645mm×1665mm×945mm).

# 4-2. Main Control Chassis



The **Main Control Chassis** includes:

a. Microprocessor unit for managing the entire energy storage system.

b. Main power connection terminals for external system connections.

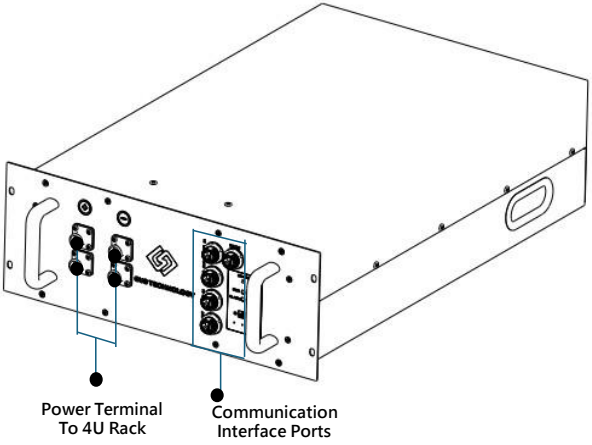
c. Communication interface ports.

d. Circuit breaker.

e. Wi-Fi connector.

## 4-3. Standard 4U Chassis

The Standard 4U Chassis includes:

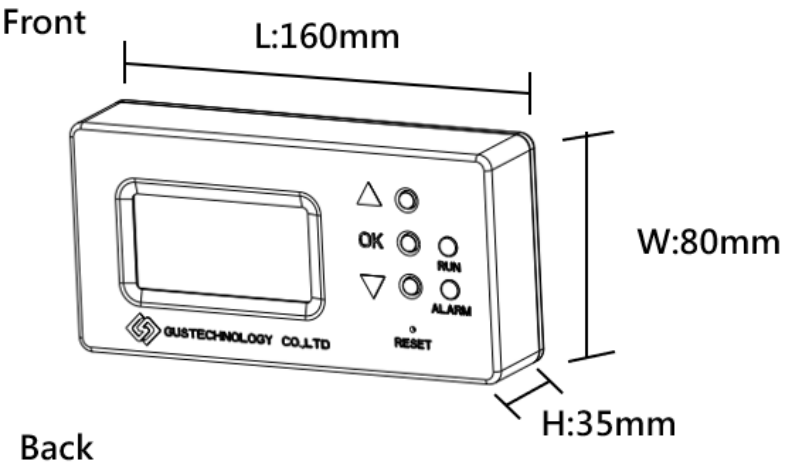



a. An independent Battery Management System (BMS) with communication interface ports.

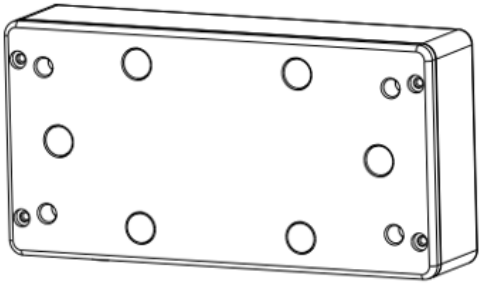
b. Power connection terminals to link with other 4U chassis units.

c. ≧ 2.5 kWh lithium-titanate (LTO) battery pack.

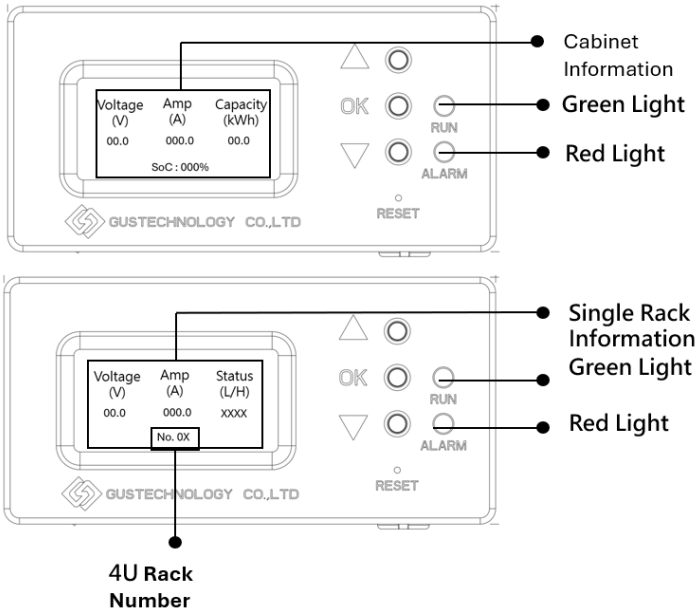
# 4-4. 3"Display




Back



- The display provides clear and comprehensive system information.



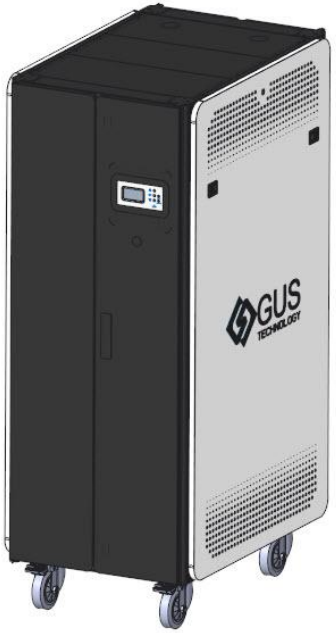

0X：The 4U chassis are numbered sequentially under the system cabinet, such as 01, 02... 06, etc.

## 4-5. Accessories Pack

| Item | Quantity |
|---|---|
| Positive cable (Red) | 6 |
| Negative cable (Black) | 6 |
| Communication cable set (Gray) | 6+1(spare) |
| Antenna set | 1 |
| Keys | 4 |

# 5. Product Specifications

| Item | Specification |
|---|---|
| Storage cabinet dimensions | W×H×D (645×1665×945) |
| Battery capacity | 15KWh (charge/discharge under 1C condition) |
| Rated voltage | 54.56V |
| Maximum charging voltage | 59.4V |
| Maximum charging current | 200A |
| Maximum discharging current | 200A |
| Charging operating temperature | 0°C~45°C |
| Discharging operating temperature | -10°C~50°C |
| Storage temperature | -40°C~60°C, Less 90% RH |
| Cooling method | Gradual perforation cooling |
| Weight | 532KG±5% |



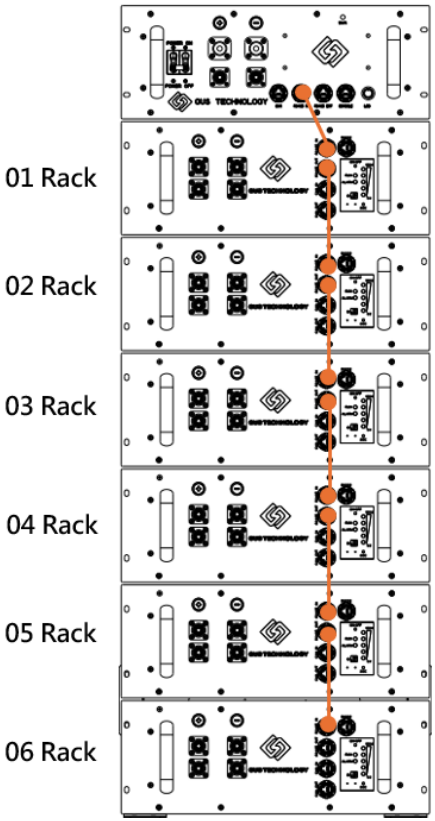
# 6. Installation Steps

## Step1. Positioning

**Select a flat, dry area with no direct sunlight. Move the cabinet to the appropriate location, then lower the two front steering wheel pedals to secure it. Rotate the leveling feet next to the steering wheels down to the ground and adjust them until the cabinet stands securely and stably.**

## Step2. Installing Communication Cables

Use the dedicated communication cables for installation. Begin by connecting the RS485 IN port of the lowest 4U chassis (06) to the RS485 OUT port of the chassis directly above it (05). Repeat this process upwards, connecting each successive chassis. Finally, connect the RS485 IN port of the GUS-01 chassis to the RS485 IN port of the main control chassis located above it.(The communication cable connection method is shown in the left diagram.)

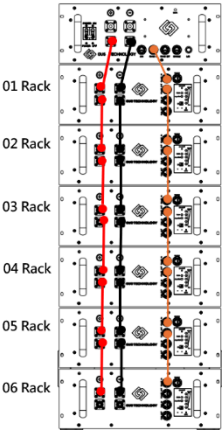


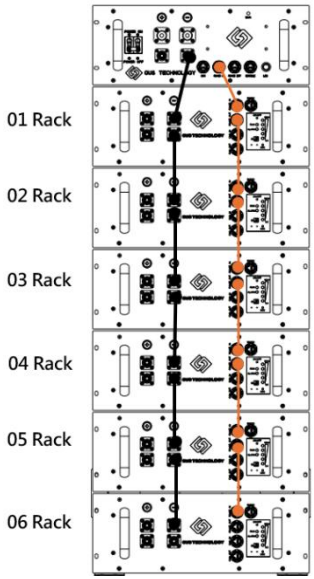
## Step3. Connecting the Negative Power Cable (Black)

Note: Ensure that the negative cable (black) is not mistakenly connected to the positive (red) terminal to avoid short circuits.

Install the negative power cable using the dedicated power cables for each 4U chassis. Start by connecting the negative terminal (symbol ○-) of the lowest 4U chassis (06) to the negative terminal (symbol ○-) of the chassis directly above it (05). Repeat this process for the remaining 4U chassis. Finally, connect the negative terminal (symbol ○-) of the 01 chassis to the negative terminal (symbol ○-) of the main control chassis located above it.

(The connection of the negative power cable is shown in the left diagram.)



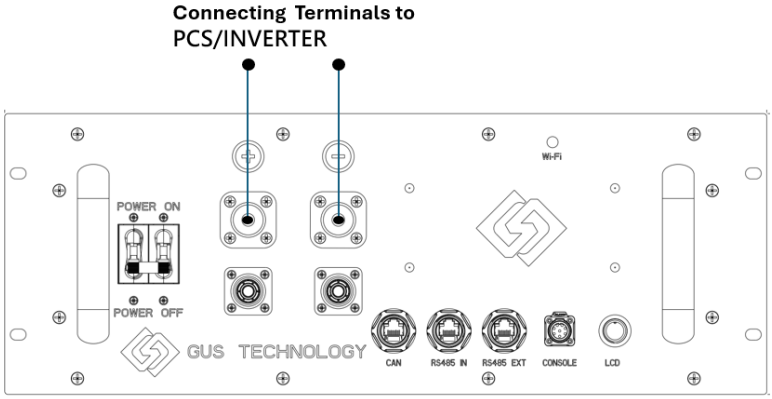

## Step4. Connecting the Positive Power Cable (Red)

Note: Ensure that the positive cable (red) is not mistakenly connected to the negative (black) terminal to avoid short circuits.

Install the positive power cable using the dedicated power cables for each 4U chassis. Start by connecting the positive terminal (symbol ○+) of the lowest 4U chassis (06) to the positive terminal (symbol ○+) of the chassis directly above it (05). Repeat this process for the remaining 4U chassis. Finally, connect the positive terminal (symbol ○+) of the 01

# 7. External Connection Method

For external connection, when connecting to an external power source, first remove the screws from the positive and negative terminal posts. Use an O-ring or U-ring connector with an inner diameter greater than 10mm. Start by securing the negative terminal, followed by the positive terminal. (The cable connected to the O-ring or U-ring connector must be able to withstand a continuous current of 250A.)




# 8. Maintenance and Cleaning

a. For safe maintenance, all main power cables must be removed first.
b. Before performing maintenance, you must fully understand the equipment status and related guidelines before proceeding.
c. Inspection of the chassis panel:
   i. Confirm the connection and looseness of the main

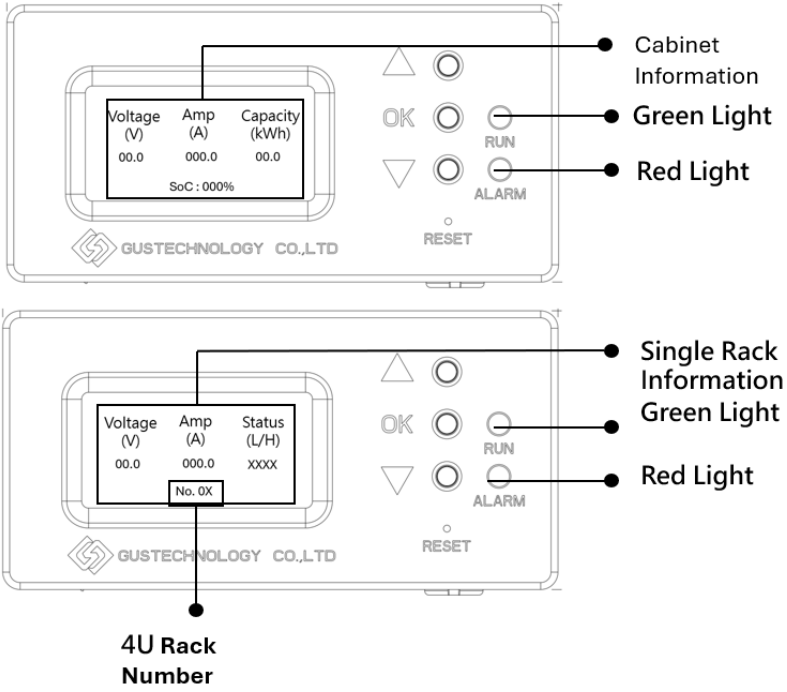
power cables and communication cables.

ii. Check the equipment's indicator lights.

iii. The panel should be kept clean.

d. All operations must be carried out by technical personnel or contact GUS Technology. (Contact information can be found in Section 12.).)

# 9. Troubleshooting Method




a. The display is used to show the energy storage system's voltage, current, capacity, and the individual voltage, temperature, and status of each battery within the chassis. A positive system current indicates charging, while a negative

system current indicates discharging. The system capacity reflects the current remaining capacity of the system.
b. Status and Indicator Lights:
i. When communication is normal and the module status is normal, the status field displays "Good," and the system ready light (green) will turn on, while the alarm light (red) will turn off.
ii. When communication is abnormal or a module's status is abnormal, the status field will display an error message (refer to the app), and the system alarm light (red) will turn on.
If a panel error message appears or the system alarm light turns on, please contact the system installer as soon as possible (see Section 12 for contact information).
c. Explanation of Error Messages:
i. If the error message displays "Fail," it indicates an issue with the battery box.
ii. If the error message displays "XXXX," it indicates a failure of the battery box.

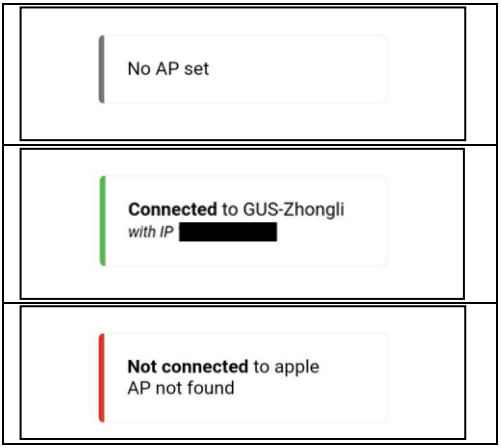
# 10.Wi-Fi Setting

1. Turn on your mobile device and use a wireless network to search for the device's SSID, then connect to it.
2. After connecting to the 15kWh device's AP, open a web browser and enter the URL: 192.168.4.1. Once you access the web server, the following web interface will be displayed.


3. The homepage of the webpage will display the device's AP name, Wi-Fi connection status, and three configuration buttons.

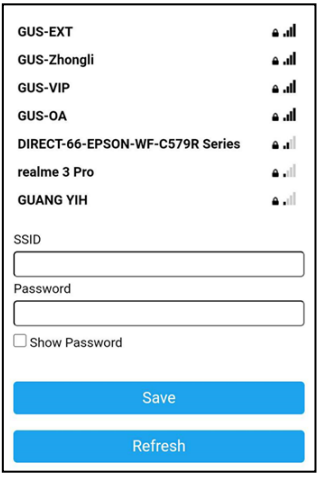
3-1. Configure Wi-Fi: Navigate to the Wi-Fi settings page.
3-2. Info: Go to the information page to view the Wi-Fi and device AP status, and to clear the Wi-Fi settings.
3-3. Exit: Exit the server page.

4. There are three types of Wi-Fi statuses:




5. Configure Wi-Fi

The Configure Wi-Fi page allows you to set the Wi-Fi name (SSID) and password. You can click the search button at the top to find Wi-Fi names instead of manually entering them. After entering the Wi-Fi name and password, press Save. If there is an input error, it can be cleared using the Refresh button.



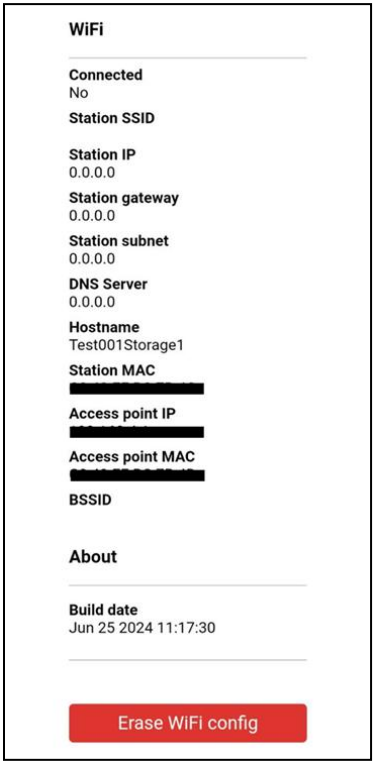
6. Info Page

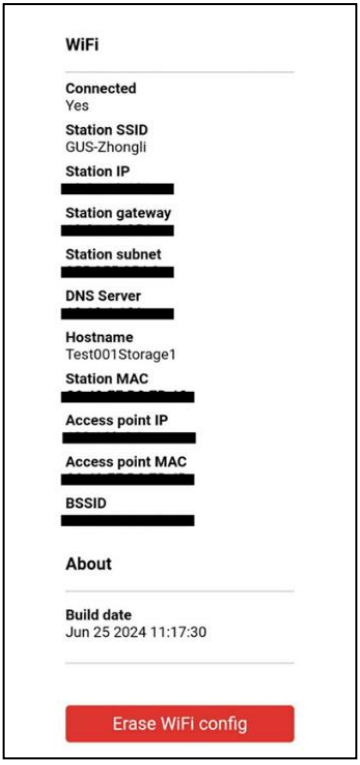
The Info page displays the status and information of the Wi-Fi and the 15kWh device AP.

6.1. Before Connection (left image): Only the device AP information is displayed since there is no Wi-Fi connection.

6.2. After Connection (right image): Both the Wi-Fi and device AP information are displayed.

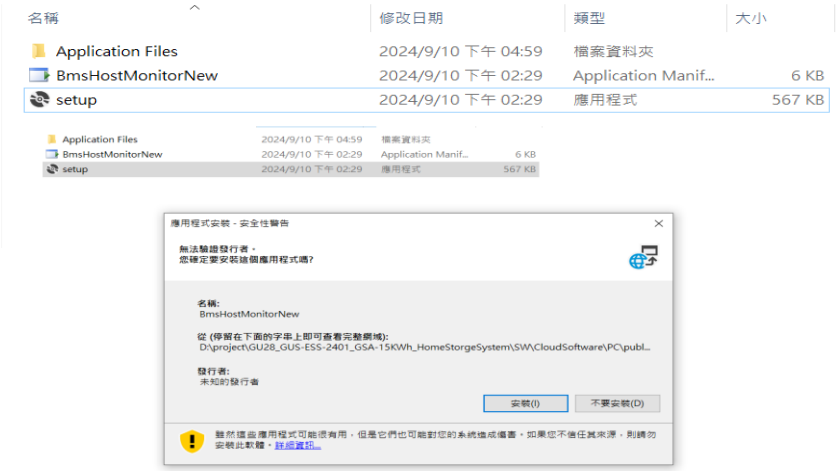
6.3. Erase Wi-Fi Config: This option allows you to clear the previous Wi-Fi settings.



# 11. APP Installation

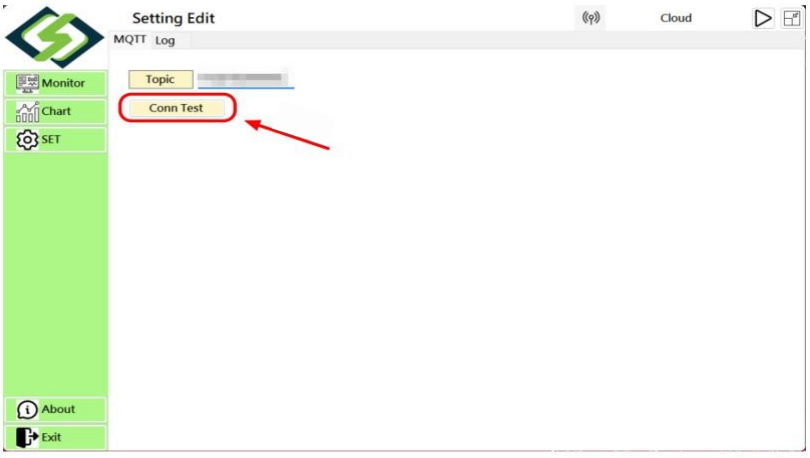
## 11-1. PC Application Installation



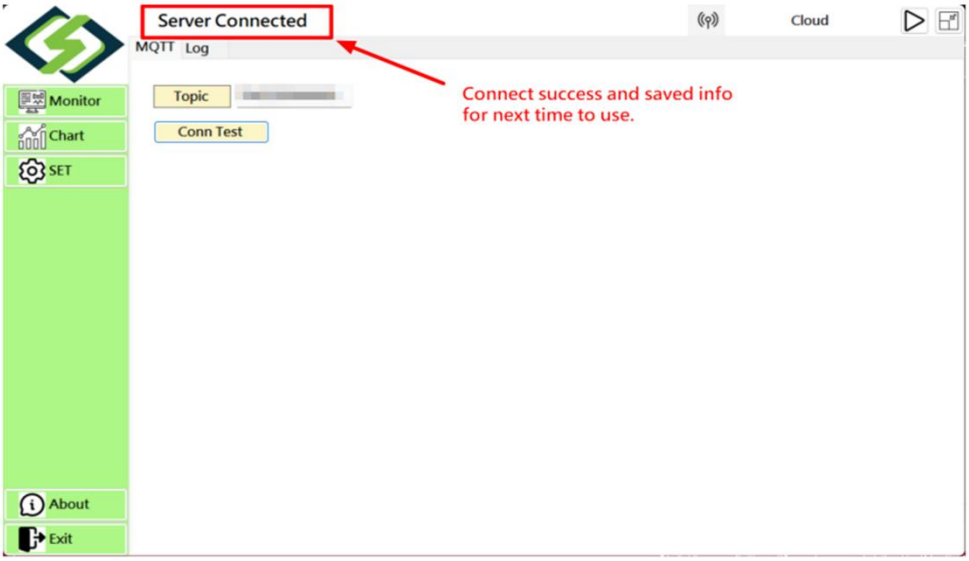

## 11-2. PC Version Software Operation Instructions

### Start connect

- Input Topic ID in field
- Press Conn Test



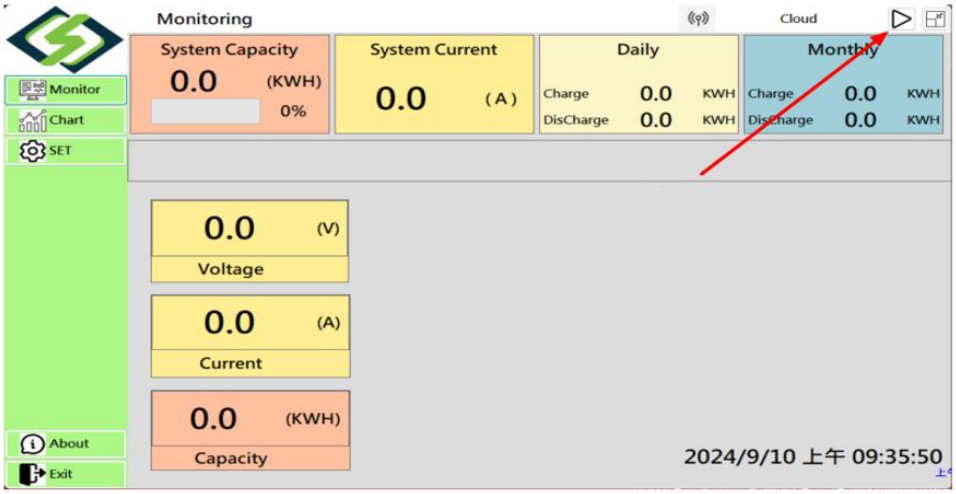
- Check status



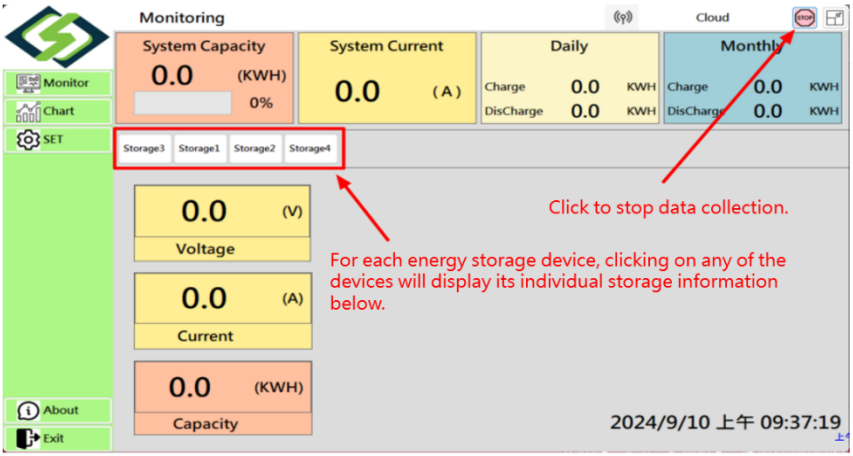

- If "Server Connected" is not displayed, please recheck the input information for the "Topic ID."
- If a successful connection has been made once, the system will save the Topic ID on the computer.

## Start monitor

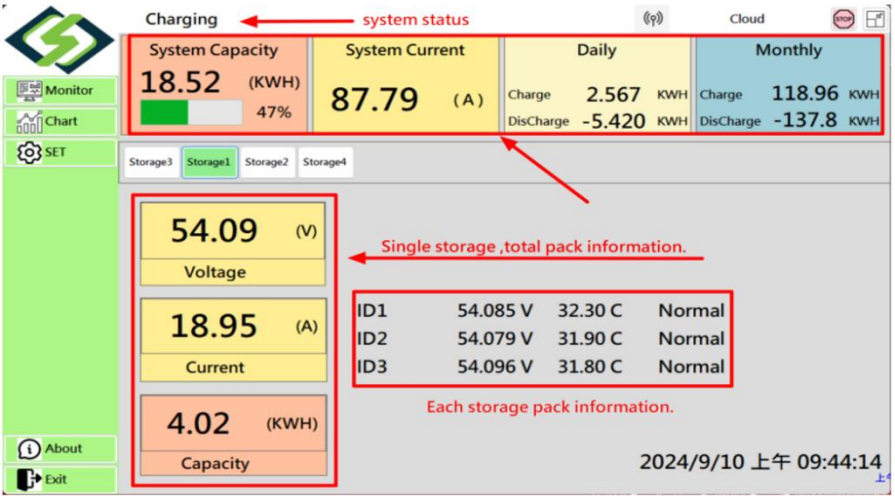
- Press triangle start button



- Receive information




- Display introduce

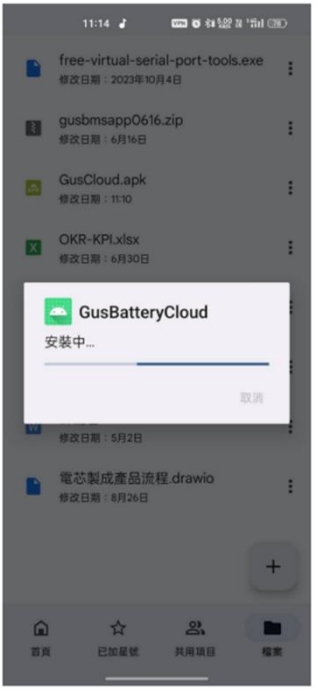


# 11-3.Android APP Installation

- Save GusCloud.apk to google cloud
  - 

- Tap GusCloud.apk to install
  - 

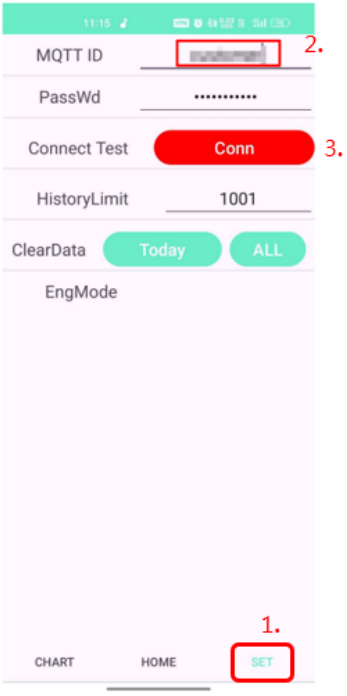

- If the android phone's version is newer,you might see screen below:
  - 

- Install completed and open app
  - 

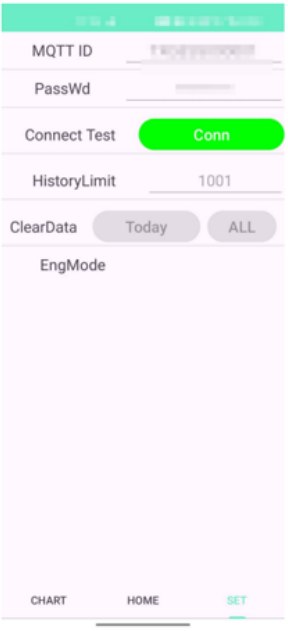
# 11-4. Android App Operation Instructions

## Connect to cloud

- Tap "SET" on bottom side · Input Topic ID



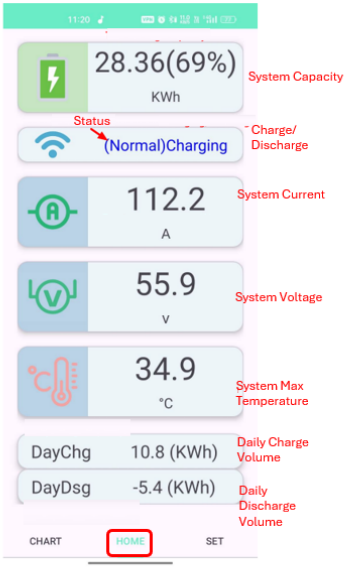

- Tap "Conn"




- Tap "HOME" to main page

## Monitor information

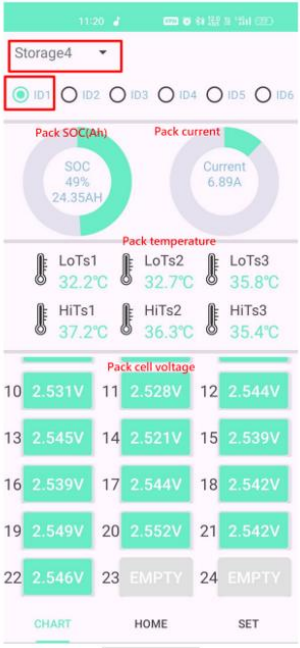
- Diaplay information(HOME)




- Diaplay information(CHART)
  - Select storage


  - Select pack id


  - Information



# 12. Contact Information

## GUS Technology Co., Ltd

No.79, Dongyuan Rd., Zhongli Dist., Taoyuan City, Taiwan


Tel: + 886-3-451-2688

Fax: +886-3-451-2568

Email: info@gus-tech.com.tw

Web site: http://gustech.com/