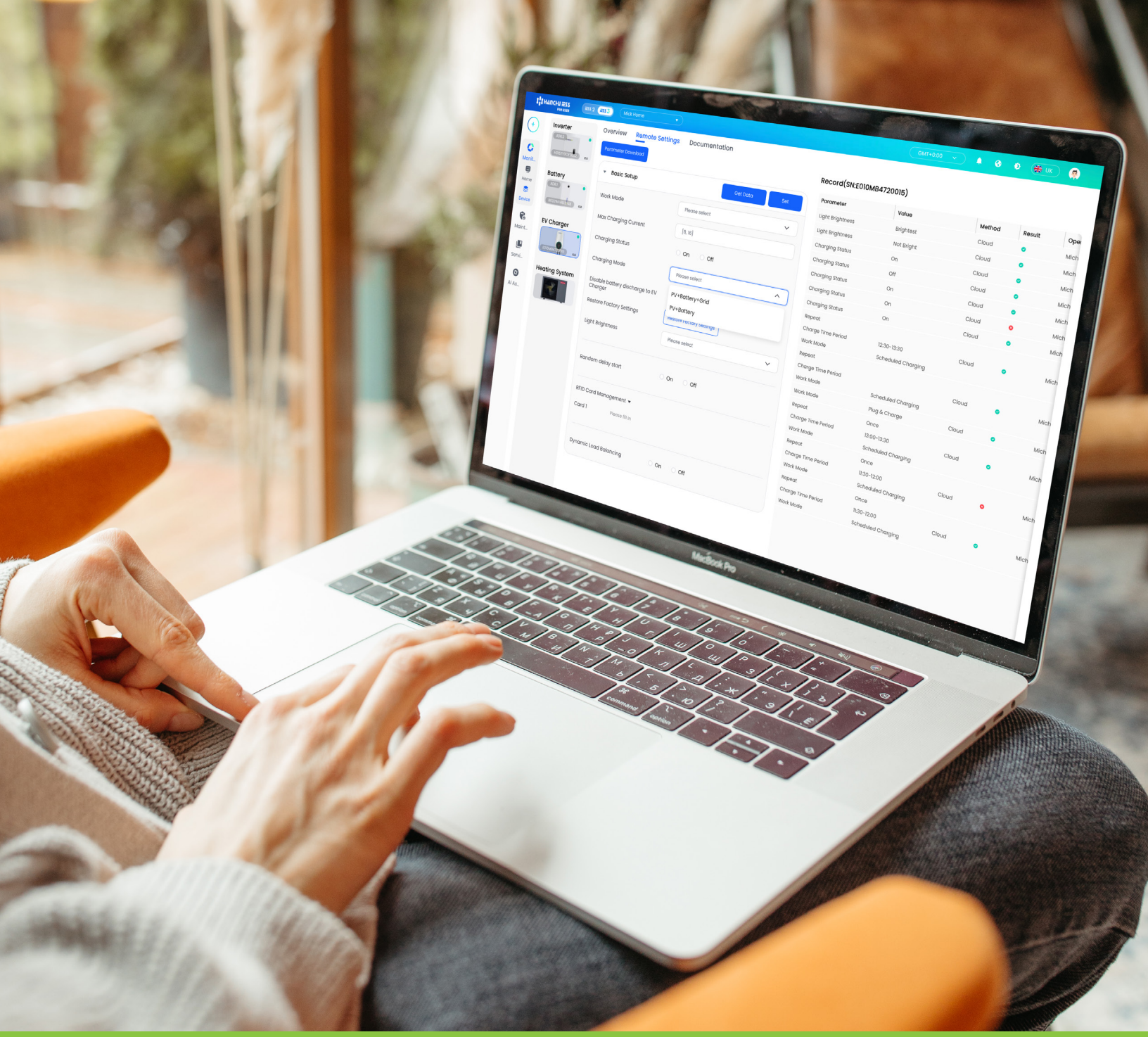

HANCHU ESS Battery Storage System - **User Guide**

What Charging Modes Are Available?
How Do I Select a Charging Mode?
– Web-Portal

Infinity Innovations | HANCHU ESS

Version 1.0

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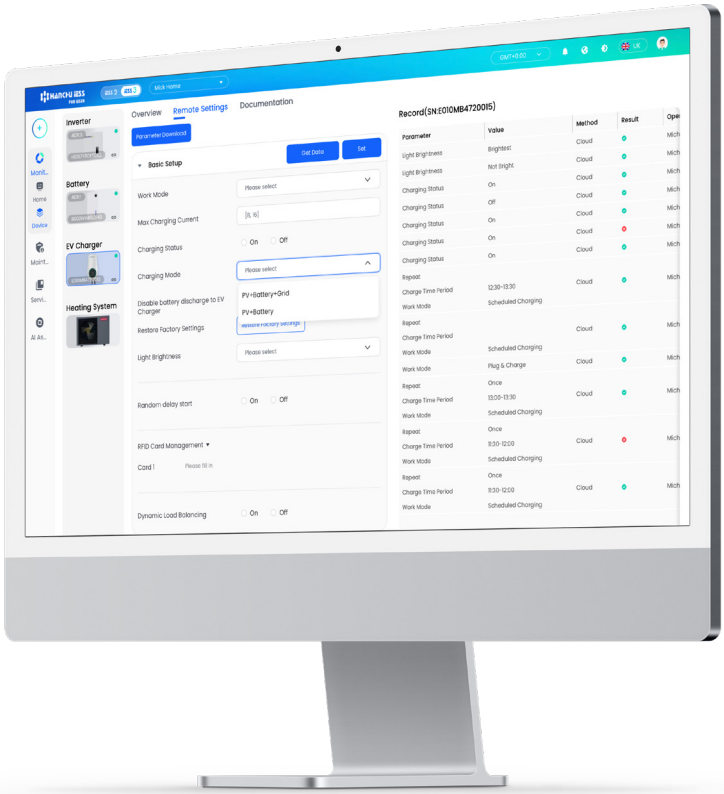
1. Introduction

Your Hanchu ESS EV charger offers different charging modes that allow you to customize how your vehicle charges. Each charging mode is designed for specific situations and energy management strategies. This guide explains all available charging modes and provides step-by-step instructions on how to select the charging mode that best suits your needs through the Hanchu ESS monitoring portal.



2. Understanding Charging Modes

Charging modes determine the behavior and timing of your EV charger. They work in conjunction with your selected work mode to optimize your charging experience based on your energy availability, cost considerations, and vehicle needs.

3. Available Charging Modes

Your Hanchu ESS EV charger supports the following charging modes:

3.1 Plug & Charge

What It Does: This is the most straightforward charging mode. When you plug your vehicle into the charger, it immediately begins charging at the maximum available current (subject to your Max Charging Current setting).

Best For: Users who want simple, immediate charging without scheduling or optimization. This is ideal if you need your vehicle charged quickly or don't have specific time-based energy goals.

How It Works: As soon as your vehicle is connected and the charger is set to 'On,' charging begins instantly. The charger will continue charging until the vehicle's battery is full or you manually stop the charging.

Key Characteristics:

- Immediate charging upon connection
- No scheduling required
- Uses maximum available current
- Simplest mode to use

3.2 Scheduled Charging

What It Does: This mode allows you to set specific times when you want your vehicle to charge. The charger will only charge during your designated charging windows.

Best For: Users on time-of-use (TOU) electricity tariffs who want to charge during cheaper off-peak hours. Also useful if you want to avoid charging during peak demand times or if you prefer to charge at specific times of day.

How It Works: You set charging time windows (e.g., 11 PM to 7 AM). The charger will only charge during these periods. If you plug in your vehicle outside these times, it will wait until the next scheduled charging window to begin.

3. Available Charging Modes

Key Characteristics:

- Charges only during scheduled times
- Ideal for cost optimization
- Requires time window configuration
- Helps manage peak electricity demand

Example: If your tariff charges £0.15/kWh during peak hours (5 PM - 9 PM) and £0.08/kWh during off-peak hours (9 PM - 7 AM), you could set Scheduled Charging to only charge between 9 PM and 7 AM, saving money on your electricity bill.

3.3 Stripe Charge (or Timed Charging)

What It Does: This mode charges your vehicle in controlled intervals or 'stripes' of charging and waiting periods. It's useful for managing electrical load or for charging from renewable sources that may have variable availability.

Best For: Users who want to distribute their charging load throughout the day, reduce peak demand on their electrical system, or optimize charging when solar generation is variable.

How It Works: The charger charges for a set period, then pauses, then charges again. This creates a pattern that helps manage energy consumption and can reduce strain on your electrical installation.

Key Characteristics:

- Charges in intervals
- Helps manage electrical load
- Useful for renewable energy optimization
- Reduces peak demand spikes

3. Available Charging Modes

3.4 PV+Battery+Grid (Smart/Hybrid Mode)

What It Does: This advanced mode intelligently combines solar power, battery storage, and grid power to optimize your charging. The charger prioritizes solar energy first, then uses battery power, and finally draws from the grid if needed.

Best For: Users with solar panels and battery storage who want maximum energy independence and cost savings. This mode automatically adapts to your energy availability throughout the day.

How It Works: The charger monitors your solar generation and battery state of charge. It charges your vehicle using available solar power first. If solar isn't sufficient, it uses stored battery energy. Only when both are insufficient does it draw from the grid.

Key Characteristics:

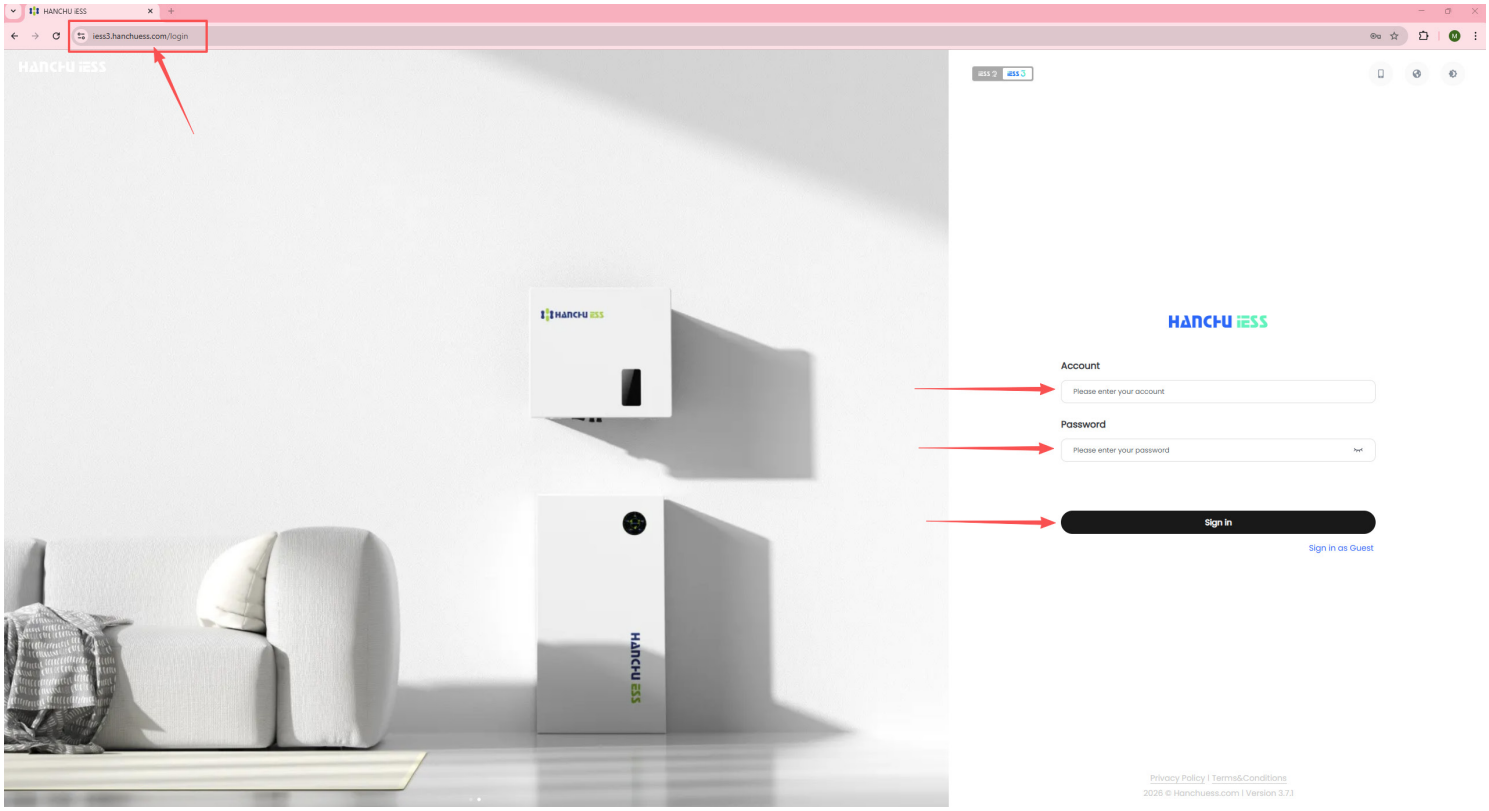
- Maximizes renewable energy use
- Minimizes grid consumption
- Requires solar panels and battery storage
- Most cost-effective long-term
- Automatically adapts to energy availability

Example: During a sunny day, your charger will use excess solar power to charge your vehicle. In the evening, if solar is no longer available but your battery has stored energy, it will use battery power. At night or during cloudy periods, it will draw from the grid as needed.

4. Step-by-Step Guide to Selecting a Charging Mode

4.1 Step 1: Log In to the Hanchu ESS Portal

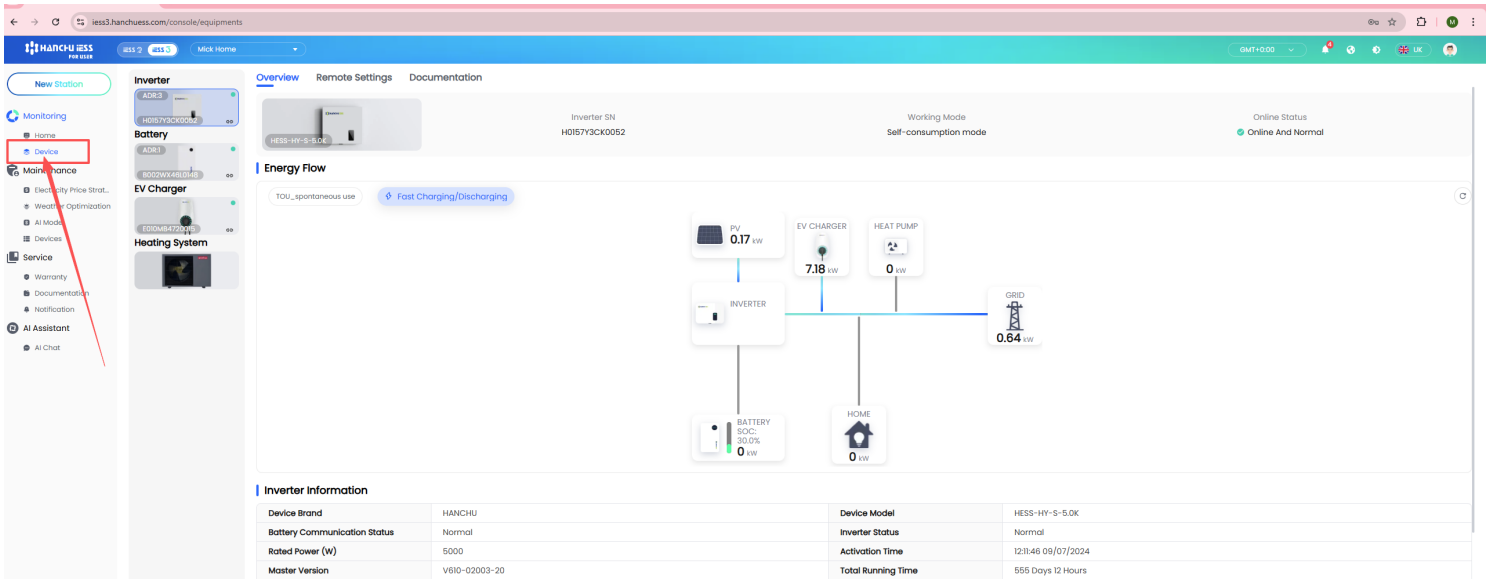
Begin by accessing the Hanchu ESS web portal. Open your web browser and navigate to the portal URL. You will be presented with the login screen. Enter your **Account** (username) and **Password**, then click the **Sign In** button.



4. Step-by-Step Guide to Selecting a Charging Mode

4.2 Step 2: Navigate to Devices

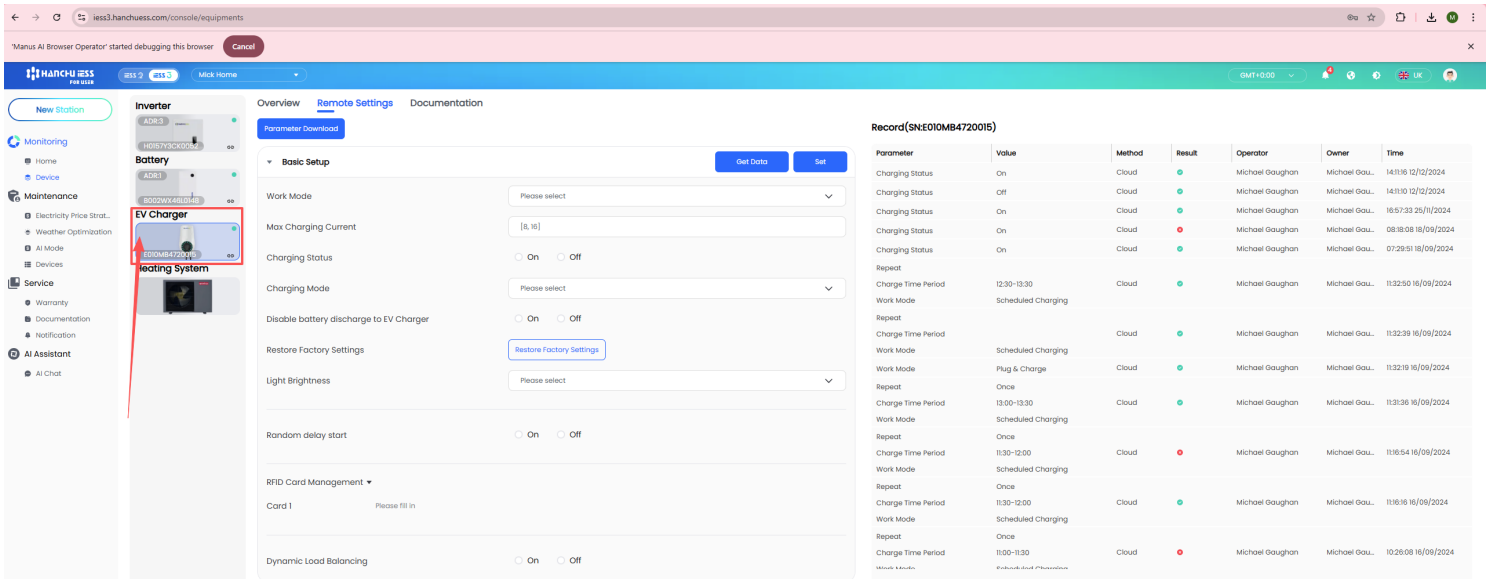
From the main dashboard, locate the **Device** option in the left-hand sidebar menu. Click on **Device** to view a list of all components in your Hanchu ESS system.



4. Step-by-Step Guide to Selecting a Charging Mode

4.3 Step 3: Select Your EV Charger

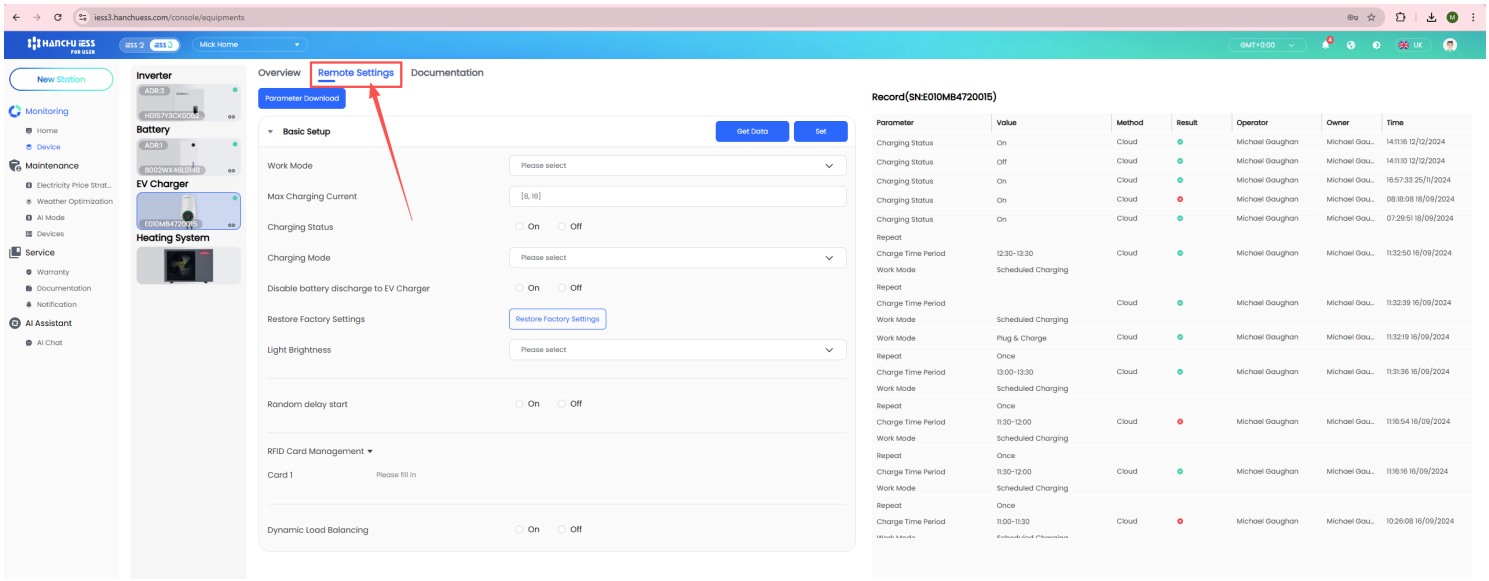
On the devices page, you will see a list of your installed Hanchu ESS components. Click on the **EV Charger** section to select it and view its specific details and settings.



4. Step-by-Step Guide to Selecting a Charging Mode

4.4 Step 4: Access Remote Settings

At the top of the EV Charger's detail page, click on the **Remote Settings** tab. This will take you to the remote configuration interface for your EV charger.



4. Step-by-Step Guide to Selecting a Charging Mode

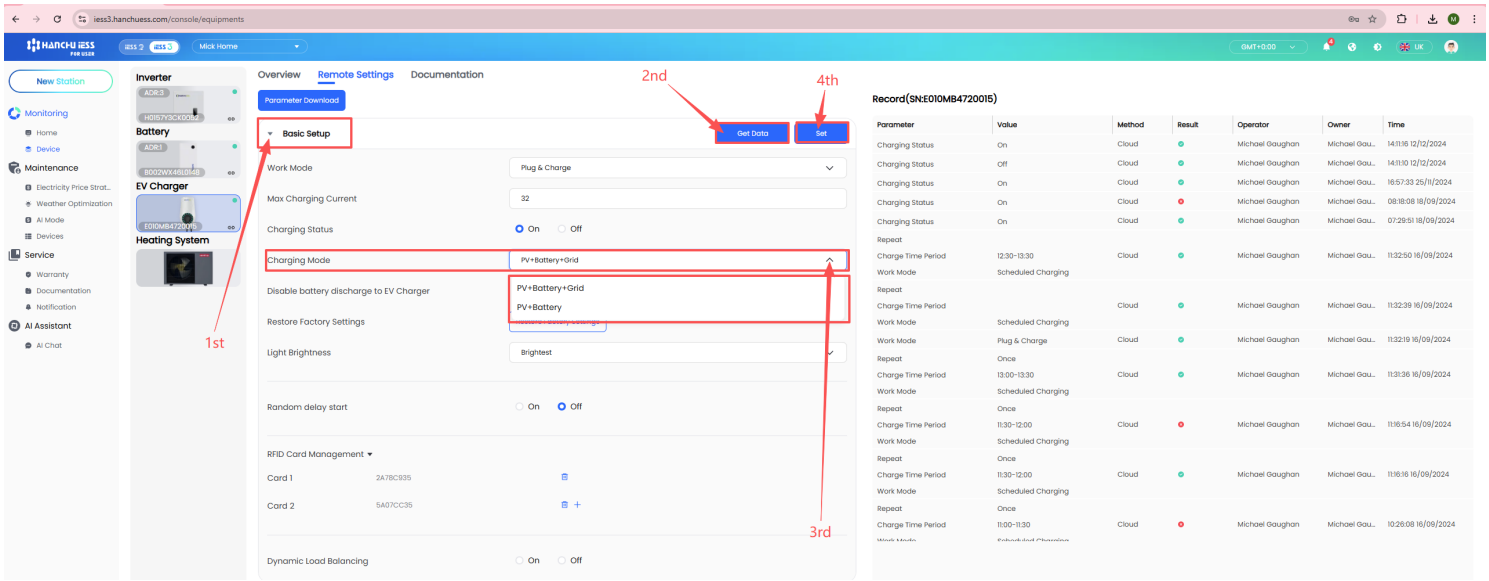
4.5 Step 5: Select Your Charging Mode

On the Remote Settings page, you will find the Basic Setup section. To select your charging mode, follow these steps in order:

1. Get Data: First, click the Get Data button to retrieve the latest settings from the EV charger.
2. Open Basic Setup: The Basic Setup section should already be visible. If not, click on it to expand it.
3. Locate Charging Mode: Find the Charging Mode dropdown field. This shows your current charging mode setting.
4. Select Your Mode: Click on the dropdown menu to see all available charging modes:

- Plug & Charge
- Scheduled Charging
- Stripe Charge
- PV+Battery+Grid

5. Choose Your Preferred Mode: Select the charging mode that best suits your needs and energy situation.
6. Set: Finally, click the Set button to apply your changes. A confirmation message will appear indicating that the setting has been applied.



Example: Setting Times for Expensive Tariffs

If your electricity provider offers expensive rates from 5:00 PM to 7:00 PM, you would set:

Field	Value
Start time	17:00
End time	19:00

5. Choosing the Right Charging Mode for Your Situation

5.1 Decision Guide

Do you want immediate charging whenever you plug in?

→ Choose **Plug & Charge**

Are you on a time-of-use tariff and want to save money?

→ Choose **Scheduled Charging**

Do you want to reduce peak demand on your electrical system?

→ Choose **Stripe Charge**

Do you have solar panels and/or battery storage?

→ Choose **PV+Battery+Grid for maximum savings and energy independence**

Do you want the system to automatically optimize based on available energy?

→ Choose **PV+Battery+Grid**

6. Important Information

6.1 Changing Charging Modes

You can change your charging mode at any time. There is no penalty for switching between modes. If you're unsure which mode is best for you, you can try different modes to see which works best with your lifestyle and energy tariff.

6.2 Mode Compatibility

Plug & Charge **- Works with any electrical installation**

Scheduled Charging - Requires you to set charging times; best with TOU tariffs

Stripe Charge - Works with any installation; useful for load management

PV+Battery+Grid - Requires solar panels and/or battery storage to be fully effective

6.3 Immediate Effect

Changes to your charging mode take effect immediately after you click the Set **button. If a vehicle is currently charging, the charging behavior will adjust according to the new mode.**

6.4 Important Notes

- **Trial Period:** Don't hesitate to try different modes. You can easily switch back if a mode doesn't suit your needs.
- **Tariff Information:** If you're using Scheduled Charging, make sure you know your electricity tariff's peak and off-peak hours.
- **Solar Optimization:** If you have solar panels, PV+Battery+Grid mode will help you maximize your renewable energy usage.
- **Battery Protection:** All modes are designed to protect your vehicle's battery and your electrical system.
- **Scheduled Charging Setup:** If you select Scheduled Charging, you may need to configure your charging time windows separately (consult your installer for details).

7. Practical Scenarios

7.1 Scenario 1: Working Professional with TOU Tariff

Situation: You work during the day and return home at 6 PM. Your electricity is expensive from 5 PM to 9 PM, then cheaper from 9 PM to 7 AM.

Recommended Mode: Scheduled Charging

Configuration: Set charging to occur between 9 PM and 7 AM when electricity is cheaper.

Benefit: Save 40-50% on charging costs compared to charging during peak hours.

7.2 Scenario 2: Homeowner with Solar Panels

Situation: You have solar panels and want to maximize your renewable energy usage.

Recommended Mode: PV+Battery+Grid

Benefit: Charge your vehicle using free solar energy during the day, reducing grid consumption and electricity costs.

7.3 Scenario 3: Busy Professional Needing Quick Charging

Situation: You need your vehicle charged quickly and don't have specific time constraints.

Recommended Mode: Plug & Charge

Benefit: Simple, straightforward charging that starts immediately when you plug in.

7.4 Scenario 4: Electrical Load Management

Situation: Your home has limited electrical capacity and you want to avoid overloading the system when other appliances are running.

Recommended Mode: Stripe Charge

Benefit: Distributes charging load throughout the day, preventing peak demand spikes.

8. Need Help?

If you have questions about which charging mode is best for your situation, or if you need help configuring your charging mode, please contact your installation company for technical support. They can provide personalized recommendations based on your specific energy situation and tariff.