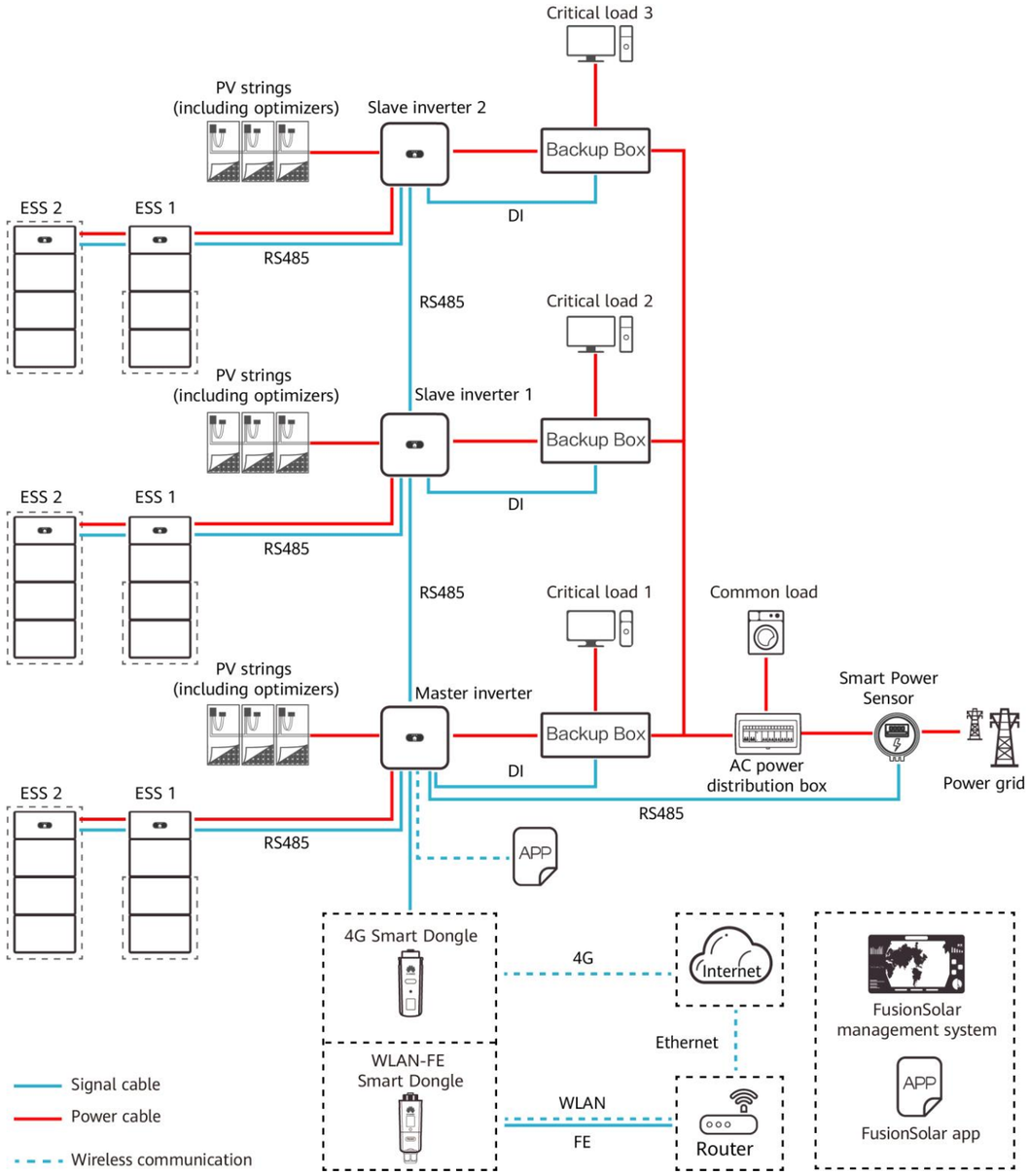
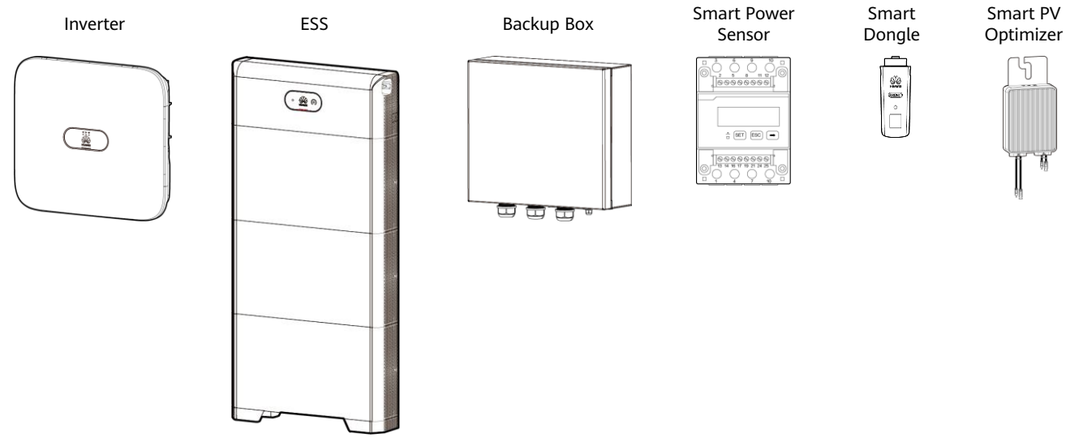
FusionSolar Residential Smart PV Quick Guide
(Three-phase PV+Storage Scenario and Smart Dongle Networking)

Issue: 01
Date: 2022-09-05

1 Networking



2 Product Overview



Component	Model	Description
Inverter (master and slave)	SUN2000-3KTL-M1 SUN2000-4KTL-M1 SUN2000-5KTL-M1 SUN2000-6KTL-M1 SUN2000-8KTL-M1 SUN2000-10KTL-M1	A maximum of three inverters can be cascaded.
Energy storage system (ESS)	LUNA2000-(5-30)-S0	• 5 kWh per battery module, system capacity up to 30 kWh when two ESSs are cascaded • If there is only one ESS, it must be connected to the master inverter.
Backup Box	Backup Box-B1	• AC input voltage range: Grid-tied (three-phase) 342–440 V; off-grid (single-phase) 220/230 V • If there is only one Backup Box, it must be connected to the master inverter.
Smart Power Sensor	DTSU666-H	• The Smart Power Sensor must be connected to the master inverter. • It connects to the inverter over RS485 for output power management and power limiting.
Smart Dongle	SDongleA-03 (4G) SDongleA-05 (WLAN-FE)	• The Smart Dongle must be connected to the master inverter. • It connects to the management system and performs power scheduling.
Smart PV Optimizer	SUN2000-450W-P SUN2000-600W-P	Long and short input cables are available to connect to PV modules with different cable lengths.

NOTE

1. The information in this document is subject to change due to version upgrade or other reasons. Every effort has been made in the preparation of this document to ensure accuracy of the contents, but all statements, information, and recommendations in this document do not constitute a warranty of any kind, express or implied.
2. For details about the solution components, installation, and cable connections, see the corresponding user manuals and quick guides.
3. The cable colors involved in this document are for reference only. Select cables in accordance with local cable specifications.

FusionSolar Residential Smart PV Quick Guide
(Three-phase PV+Storage Scenario and Smart Dongle Networking)

3 Cable Connections

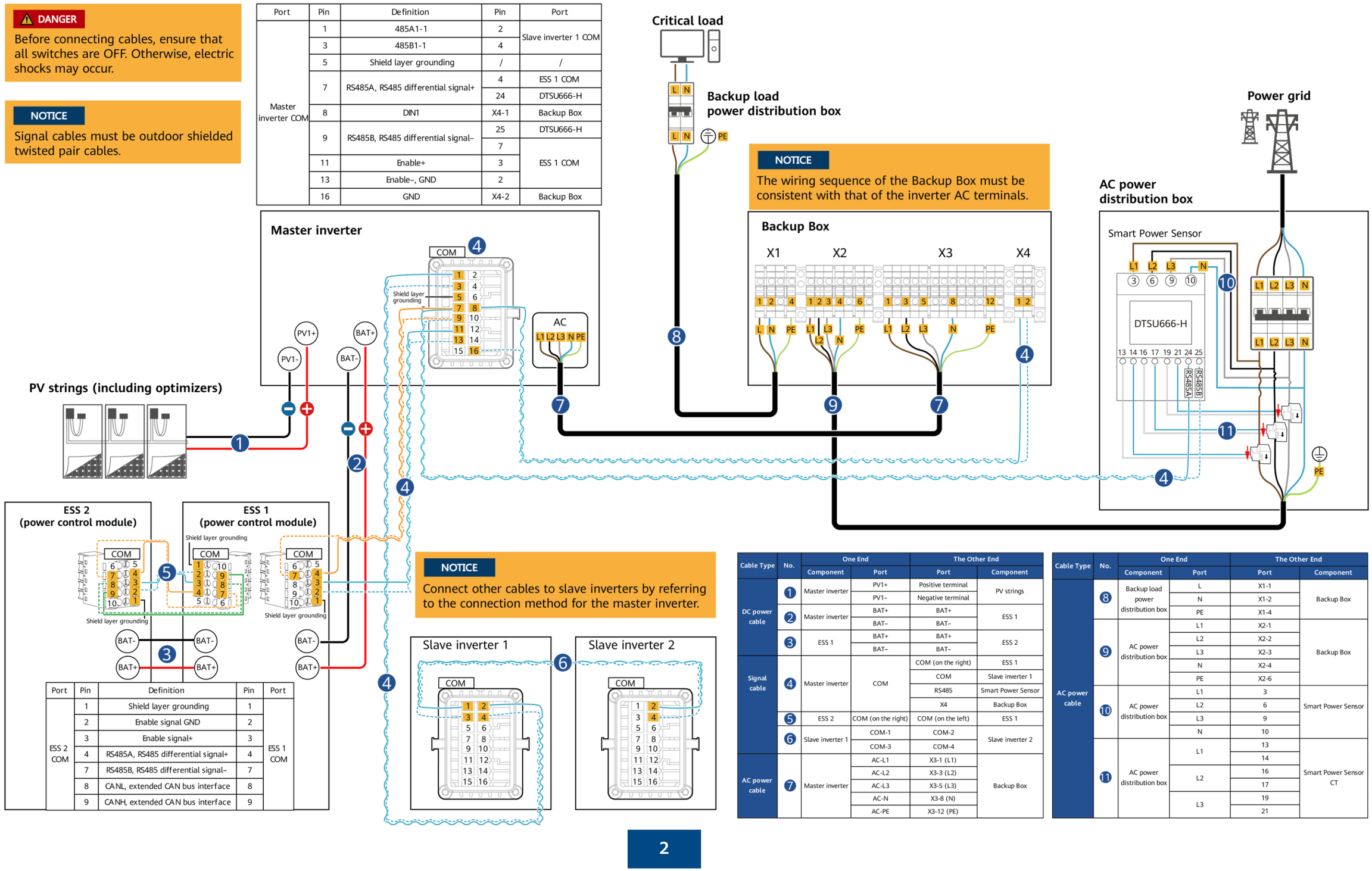
DANGER

Before connecting cables, ensure that all switches are OFF. Otherwise, electric shocks may occur.

NOTICE

Signal cables must be outdoor shielded twisted pair cables.

Port	Pin	Definition	Pin	Port
Master inverter COM	1	485A1-1	2	Slave inverter 1 COM
	3	485B1-1	4	
	5	Shield layer grounding	/	/
	7	RS485A, RS485 differential signal+	4	ESS 1 COM
			24	DTSU666-H
	8	DIN1	X4-1	Backup Box
	9	RS485B, RS485 differential signal–	25	DTSU666-H
			7	ESS 1 COM
	11	Enable+	3	
	13	Enable–, GND	2	
	16	GND	X4-2	Backup Box



NOTICE

The wiring sequence of the Backup Box must be consistent with that of the inverter AC terminals.

NOTICE

Connect other cables to slave inverters by referring to the connection method for the master inverter.

Port	Pin	Definition	Pin	Port
ESS 2 COM	1	Shield layer grounding	1	ESS 1 COM
	2	Enable signal GND	2	
	3	Enable signal+	3	
	4	RS485A, RS485 differential signal+	4	
	7	RS485B, RS485 differential signal–	7	
	8	CANL, extended CAN bus interface	8	
	9	CANH, extended CAN bus interface	9	

Cable Type	No.	One End		The Other End	
		Component	Port	Port	Component
DC power cable	1	Master inverter	PV1+	Positive terminal	PV strings
			PV1–	Negative terminal	
	2	Master inverter	BAT+	BAT+	ESS 1
			BAT–	BAT–	
	3	ESS 1	BAT+	BAT+	ESS 2
			BAT–	BAT–	
Signal cable	4	Master inverter	COM	COM (on the right)	ESS 1
				COM	Slave inverter 1
				RS485	Smart Power Sensor
				X4	Backup Box
	5	ESS 2	COM (on the right)	COM (on the left)	ESS 1
	6	Slave inverter 1	COM-1	COM-2	Slave inverter 2
			COM-3	COM-4	
AC power cable	7	Master inverter	AC-L1	X3-1 (L1)	Backup Box
			AC-L2	X3-3 (L2)	
			AC-L3	X3-5 (L3)	
			AC-N	X3-8 (N)	
			AC-PE	X3-12 (PE)	

Cable Type	No.	One End		The Other End	
		Component	Port	Port	Component
AC power cable	8	Backup load power distribution box	L	X1-1	Backup Box
			N	X1-2	
			PE	X1-4	
	9	AC power distribution box	L1	X2-1	Backup Box
			L2	X2-2	
			L3	X2-3	
			N	X2-4	
			PE	X2-6	
	10	AC power distribution box	L1	3	Smart Power Sensor
			L2	6	
			L3	9	
			N	10	
	11	AC power distribution box	L1	13	Smart Power Sensor CT
				14	
			L2	16	
				17	
			L3	19	
				21	

FusionSolar Residential Smart PV Quick Guide
(Three-phase PV+Storage Scenario and Smart Dongle Networking)

HUAWEI

4 System Commissioning

App-based Deployment Procedure

Download and install the FusionSolar app

↓

Sign up as an installer (optional, required for initial registration)

↓

Enter setup wizard

↓

Check the device status

Downloading and Installing the FusionSolar App

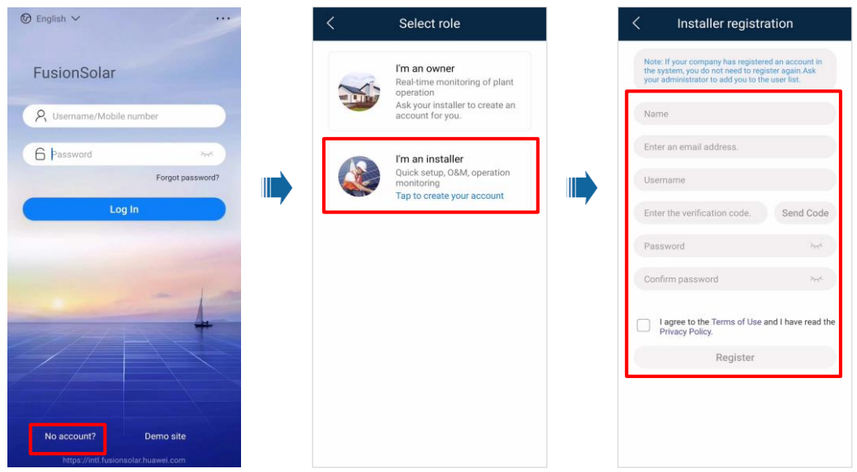
- Search for FusionSolar in the app store to download the app.
- Scan the QR code below to download the app.

FusionSolar

Installer Registration

Initial registration

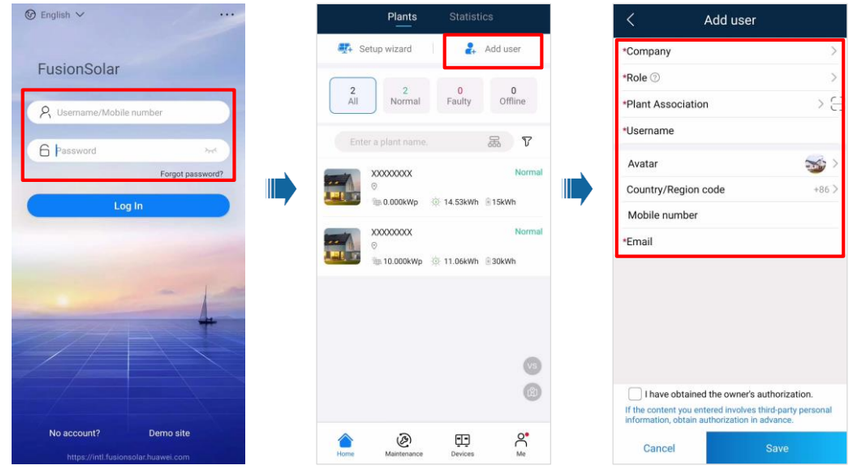
Create the first installer account, and generate a domain named after the company.



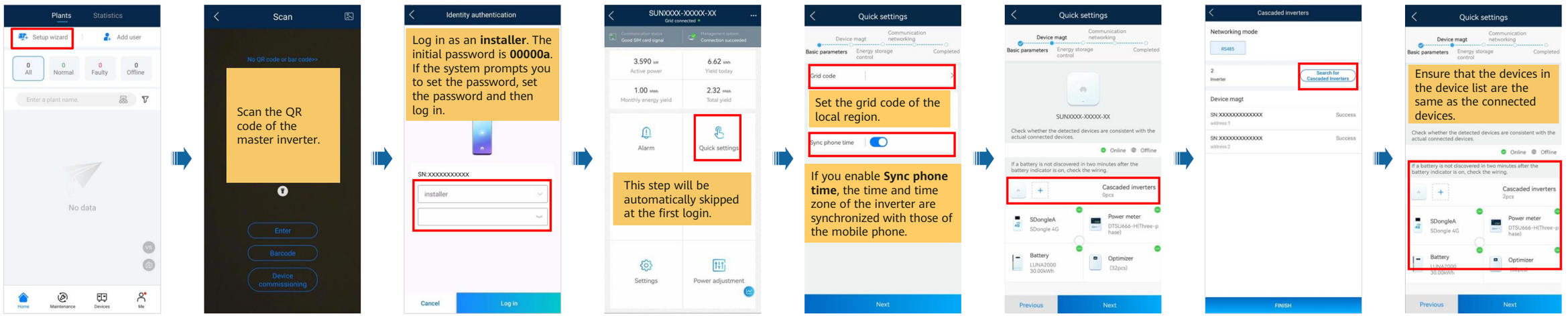
Or

Non-initial registration

To create multiple installer accounts for a company, log in to the FusionSolar app and tap **New user** to create an installer account.



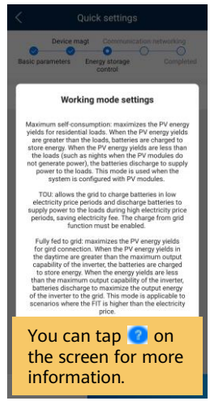
Setup Wizard (Connecting to the Inverter WiFi for Commissioning)

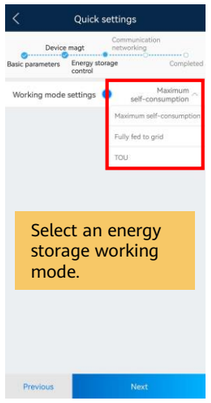


FusionSolar Residential Smart PV Quick Guide

(Three-phase PV+Storage Scenario and Smart Dongle Networking)

Set the energy storage working mode.



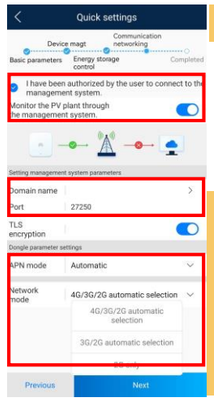


Set the communication networking.

WLAN communication

Select the router you want to connect and enter the router password.

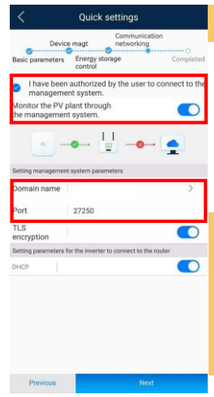
Or



4G communication

By default, **APN mode** is set to **Automatic**. If you cannot access the Internet in the **Automatic** mode, set this to **Manual**. In this case, set the parameters related to the SIM card with the information obtained from the carrier.

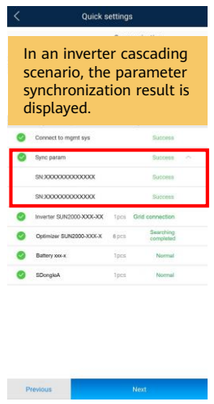
Or

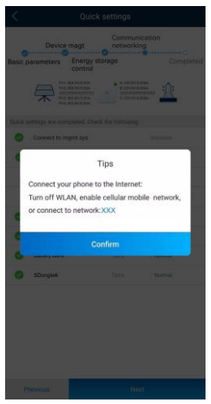


FE communication

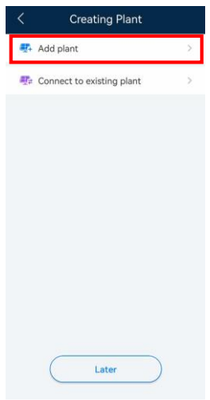
If the Ethernet parameter is displayed, the network cable is not connected. Reconnect the network cable.

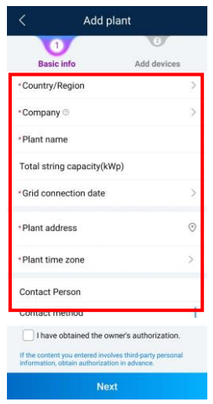
Ethernet

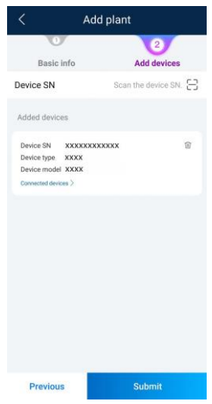




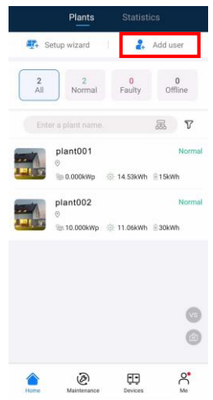
Add a plant.

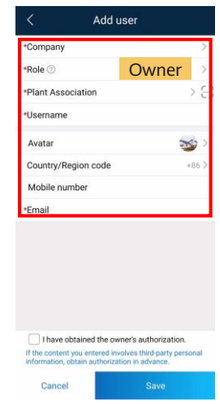




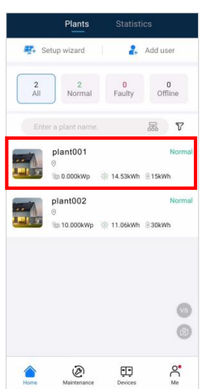


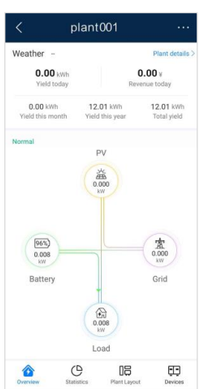
Create an owner account.





Checking the Device Status





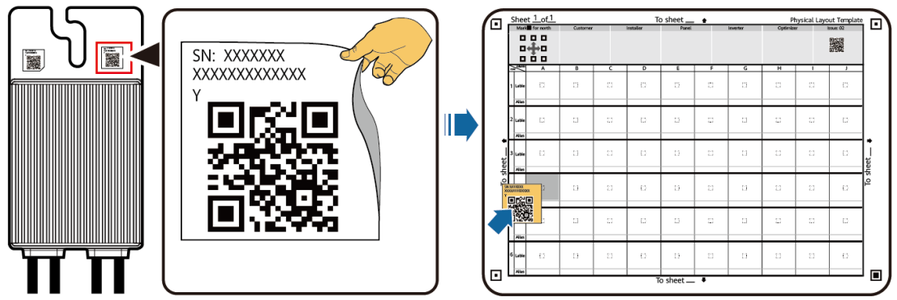
FusionSolar Residential Smart PV Quick Guide
(Three-phase PV+Storage Scenario and Smart Dongle Networking)

HUAWEI

5 Physical Layout of Smart PV Optimizers

Attaching SN Labels

Remove the SN labels from optimizers and attach them to the physical layout template based on the actual positions of the optimizers in the plant.

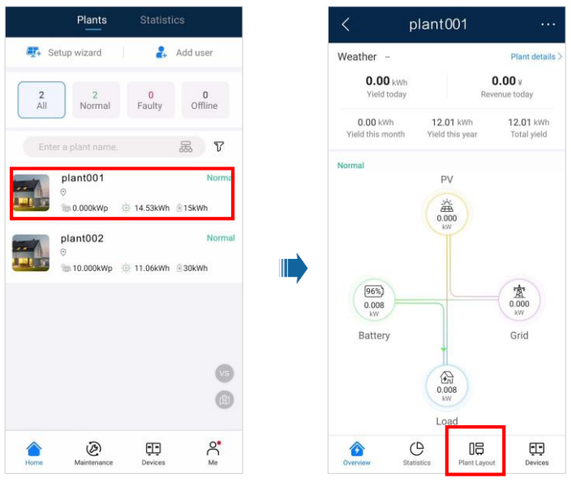


Taking a Photo of the Physical Layout Template

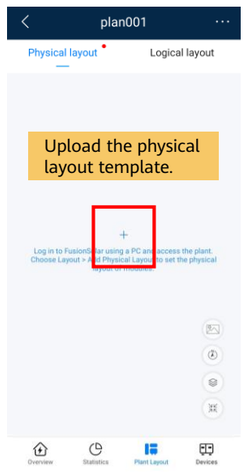
Ensure that the four positioning points on the template are within the frame.

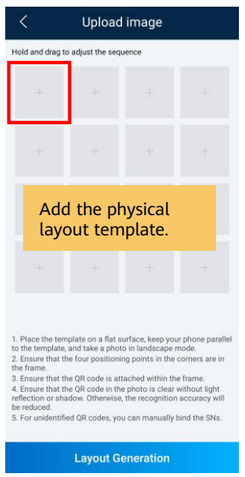
Generating a Physical Layout on the App

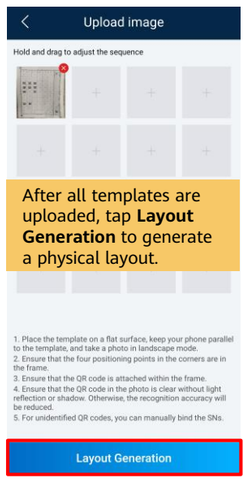
Enter the Plant Layout screen.

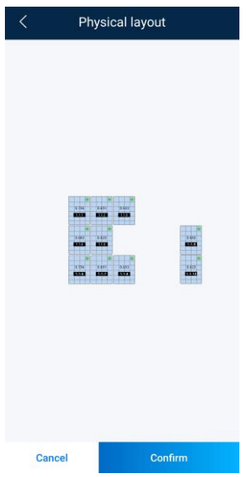


Upload the template and generate a layout.







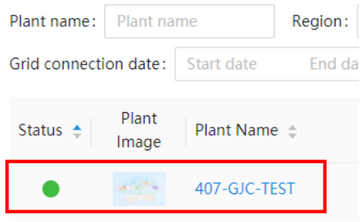


If some QR codes cannot be identified or the plant layout needs to be adjusted, log in to the FusionSolar management system WebUI.
For details, see "Creating a Physical Layout on the WebUI Manually."

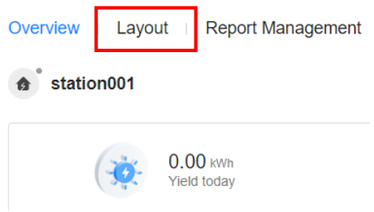
FusionSolar Residential Smart PV Quick Guide
(Three-phase PV+Storage Scenario and Smart Dongle Networking)

Generating a Physical Layout on the WebUI Automatically

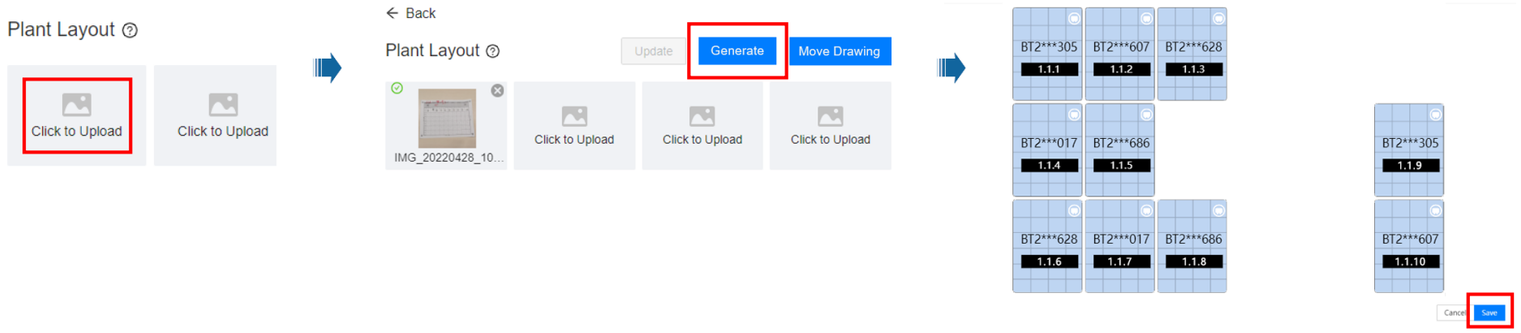
Select the target PV plant on the home page.



Click the Layout tab.

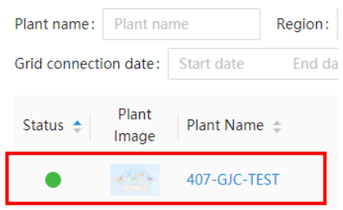


Upload the template and generate a layout.

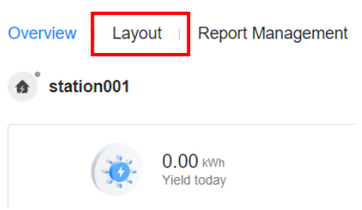


Creating a Physical Layout on the WebUI Manually

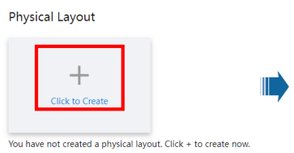
Select the target PV plant on the home page.



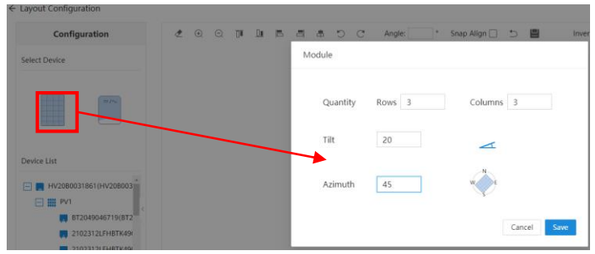
Click the Layout tab.

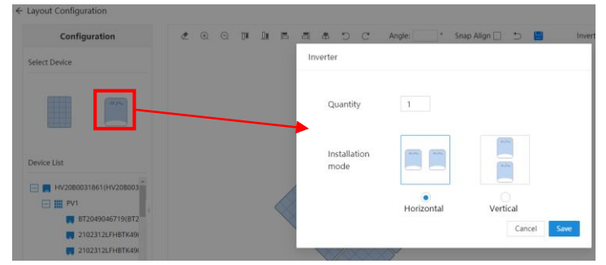


Upload the physical layout.

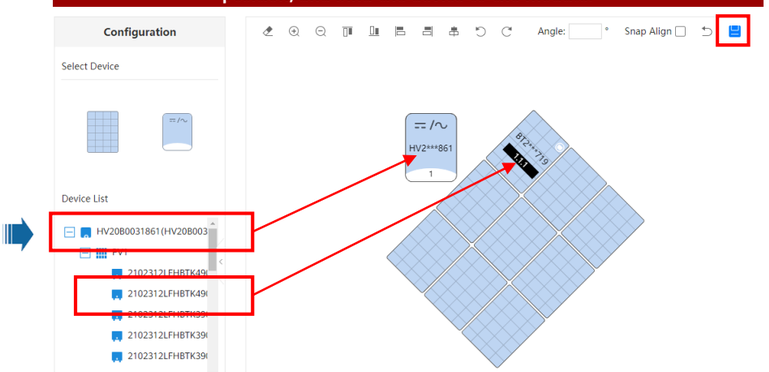


Drag module icons to the physical layout area. Add modules and adjust the angle based on the actual situation.





Select a device in the device list, drag the device to the corresponding icon position, and bind the device to the module.



(Optional) Adjust the physical layout.

Right-click the module to adjust the setting.