PV Plants Connecting to Huawei Hosting Cloud Quick Guide (Inverters + SmartLogger3000 + MBUS Networking)

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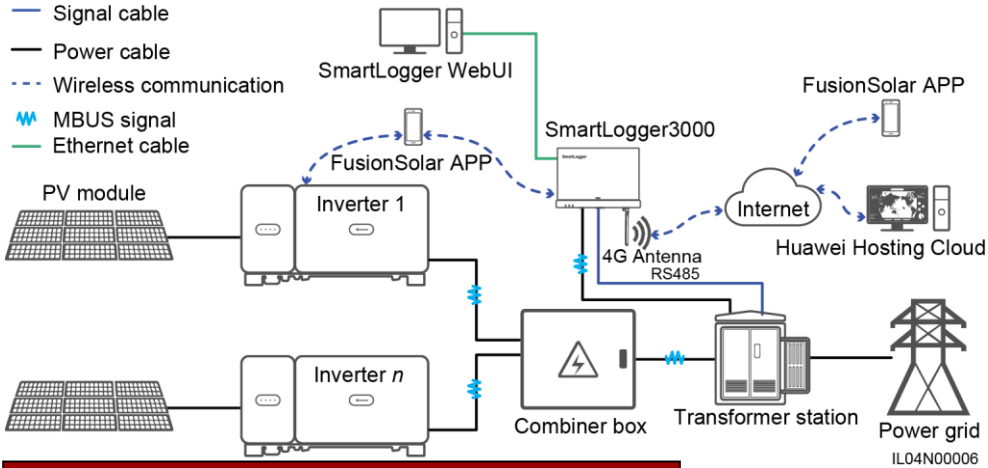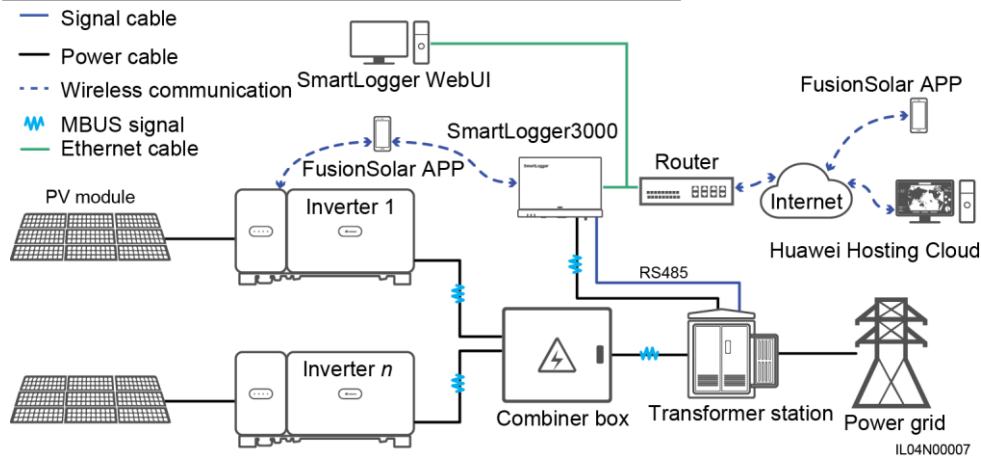
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The SmartLogger3000 (SmartLogger for short) is dedicated for monitoring and managing PV power systems. It converges ports, converts protocols, and stores data, and centrally monitors and maintains all the devices in the PV power systems.

Networking diagram for access over a Wireless Network

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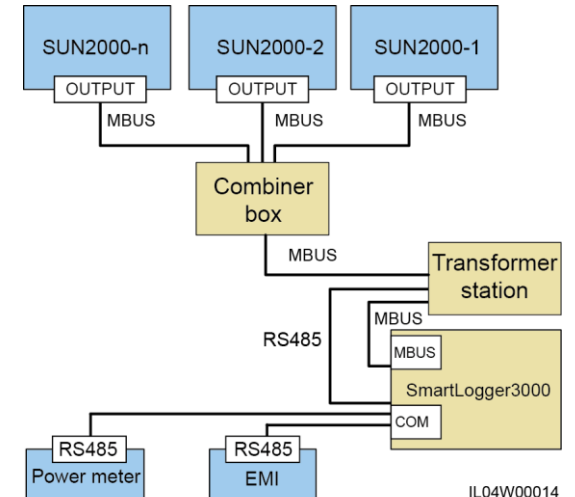
Networking diagram for access over a Wired Network

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Type	Description	Service Owner
PV module	Purchased by the customer.	Device supplier
Inverter	All Huawei inverters that support MBUS communication and provide the same output voltage.	Huawei
SmartLogger	SmartLogger3000 whose nameplate contains **MBUS** as the communication mode. The software version should be V300R001C00 or later.	Huawei
SIM card (applicable only to wireless networking)	• Customers need to purchase the standard SIM card of a local carrier (size: 25 mm x 15 mm; capacity ≥ 64 kB). • Monthly traffic of the SIM card ≥ Monthly traffic of the inverters (10 MB + Number of inverters x 4 MB) + Monthly traffic of the power meter (3 MB) + Monthly traffic of the EMIs (Number of EMIs x 3 MB) + Monthly traffic of other communications devices (provided by the device supplier).	Customer
LAN switch or router (applicable only to wired networking)	Provided by the customer and does not require a specific model.	Customer
Management system	Huawei Hosting Cloud Center. The software version should be PVMS730V300R006C10SPC100 or later.	Huawei
Mobile app	FusionSolar app that is remotely connected to the Huawei Hosting Cloud Center. The software version should be 2.5.0 or later.	Huawei
Combiner box, transformer station	Provided by the installation contractor.	Device supplier

1 Connecting SmartLogger Cables (Inverter, Combiner box, transformer station, Power meter)

For details about adding devices and setting parameters, see the *SmartLogger3000 User Manual*. You can scan the QR code to obtain it.
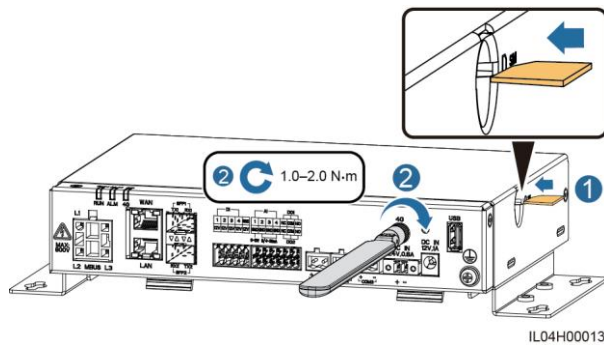

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2 Connecting SmartLogger Cables (Huawei Hosting Cloud)

### Networking diagram for access over a Wireless Network

1. Insert a SIM card into the SIM card slot on the right of the SmartLogger.
2. Install an antenna.

📖 NOTE

• When installing the SIM card, determine its installation direction based on the silk screen.
• Press the SIM card in place to lock it. In this case, the SIM card is correctly installed.

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Networking diagram for access over a Wired Network

(1) White-and-orange

(2) Orange

(3) White-and-green

(4) Blue

(5) White-and-blue

(6) Green

(7) White-and-brown

(8) Brown
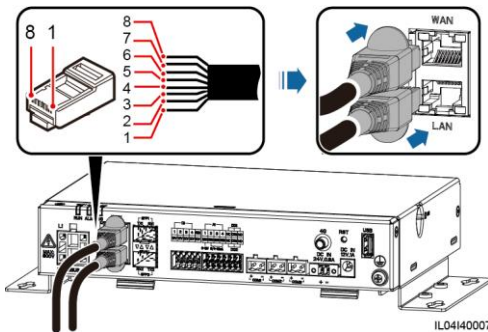
Connect the Ethernet cable to the WAN port and LAN port of the SmartLogger.

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📖 NOTE

• The SmartLogger can connect to an Ethernet switch, router, or PC over a WAN port. The SmartLogger can connect to a PC over a LAN port.
• Set the IP address for the PC on the same network segment as the SmartLogger IP address.

3 Powering On the System

1. Turn on the AC switch between the inverters and the power grid.
2. Turn on all DC switches at the bottom of the inverters.
3. Power on the SmartLogger by connecting the output terminal of its power adapter to the DC IN port and the input terminal to an AC socket.

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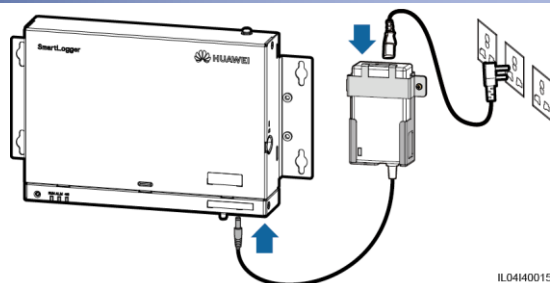
4 Setting SmartLogger Parameters

📖 NOTE

The SmartLogger parameters can be set by running the FusionSolar app or SmartLogger Web. Set the parameters based on actual requirements.

Method 1: FusionSolar app

1. Search for **FusionSolar** in Huawei app store (Android) and install the app.
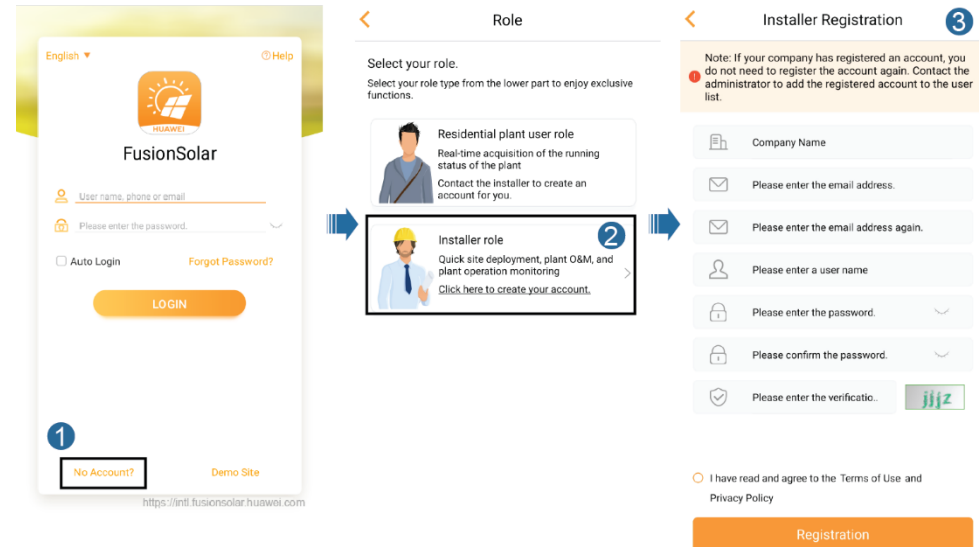
📖 NOTE

The iOS edition can be used only to view plant information. You can search for **FusionSolar** in Apple App Store to download the iOS edition.
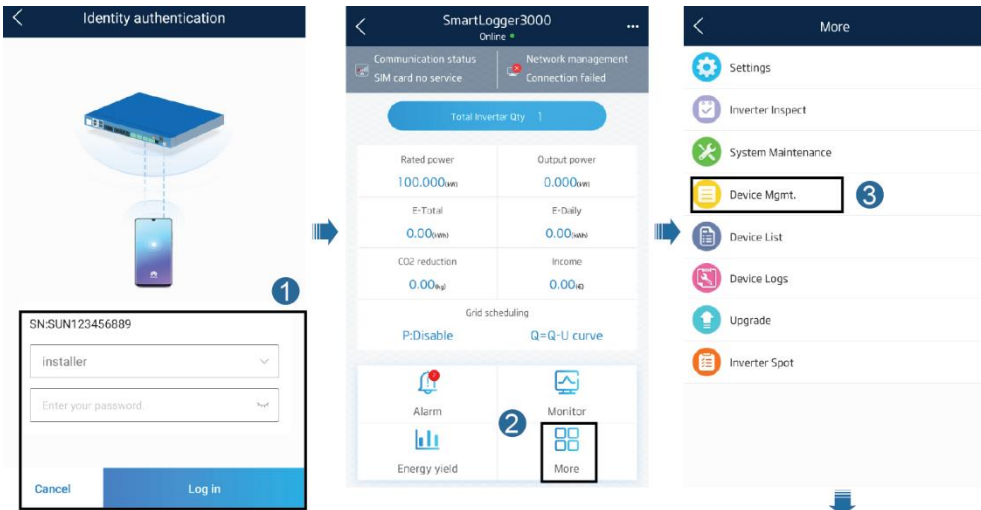
Scan the QR code to download the app (Android).

2. Run the FusionSolar app. If no account or password is available, tap **No Account?**, select **Installer role**, and enter the registration information.

3. Log in to the FusionSolar app. Tap **My** and choose **Device Commissioning**, scan the QR code on the SmartLogger or connect to the WLAN of the SmartLogger.
4. Log in as **installer**. On the SmartLogger device commissioning screen. The initial password is **00000a**, ensure that **Embedded MBUS enable** is enabled.

📖 NOTE

• The initial name of the built-in WLAN hotspot of the SmartLogger is **Logger_SN**, and the initial password is **Changeme**. The initial password for logging in to the app as **installer** is **00000a**.
• Use the initial password upon first power-on and change it immediately after login. To ensure account security, change the password periodically and keep the new password in mind. Not changing the initial password may cause password disclosure. A password left unchanged for a long period of time may be stolen or cracked. If a password is lost, devices cannot be accessed. In these cases, the user is liable for any loss caused to the PV plant.
• If the SmartLogger is powered on for the first time or the factory defaults are restored, the **Quick Settings** screen is displayed after you log in to the app. You can set parameters as required.
• When the SmartLogger WLAN is **OFF in idle state**, hold down the RST button for 1s to 3s to power on the WLAN module. The alarm/maintenance indicator (ALM) then blinks green fast for 2 minutes (other indicators are off) and the SmartLogger waits for connecting to the app. If the app is not connected, the WLAN module is automatically powered off after it is powered on for 4 hours.
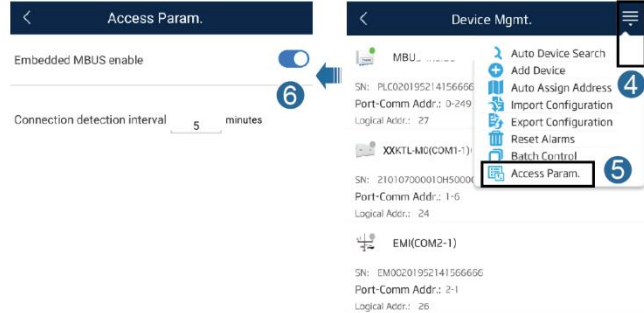
6. Set MBUS parameters.

5. (Perform this step in the MBUS anti-crosstalk scenario). On the **Anti-crosstalk list** screen, import the serial number (SN) file of the MBUS devices or manually enter the SNs.
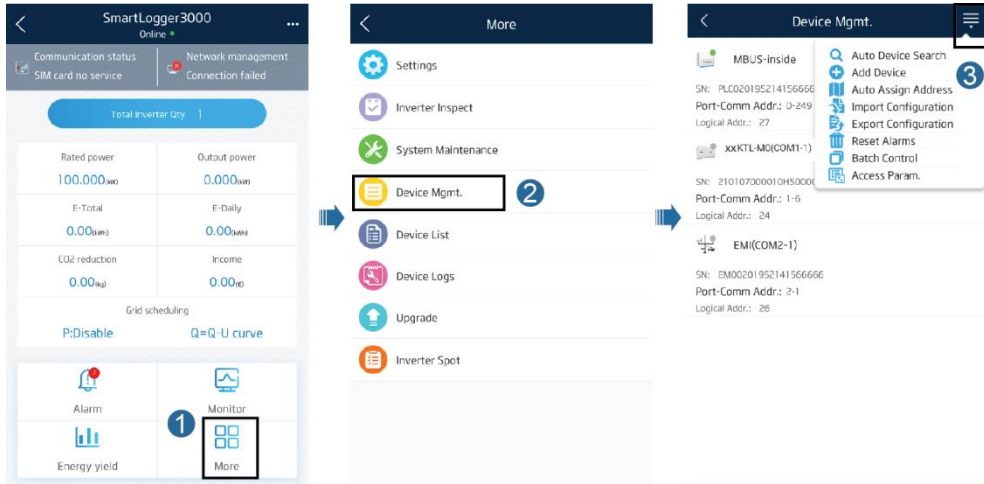

7. Add communications devices connected to the SmartLogger.

- Tap **Auto Device Search** or **Add device** to add devices connected to the SmartLogger.
- If not all devices are detected due to duplicate communications addresses of MBUS devices such as the inverter, tap **Auto Assign Address** to assign and adjust the addresses as prompted.
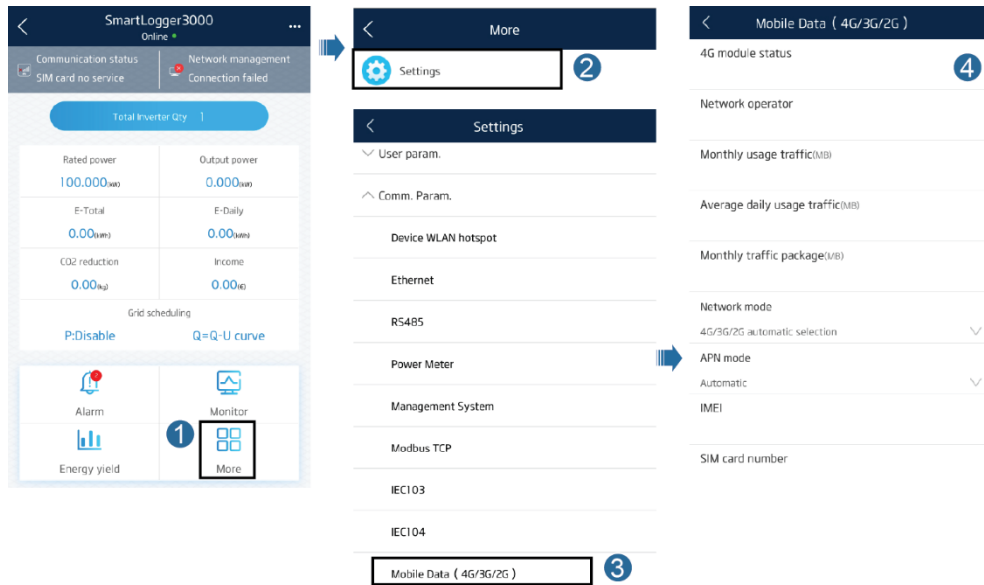
8. Set the network parameters of the SmartLogger.

- Method 1: When the SmartLogger connects to the Huawei Hosting Cloud over the wireless network, set **Monthly traffic package** and **Network mode** parameters.

📖 NOTE

- Set **Monthly traffic package** and **Network mode** based on the SIM card information.
- By default, **APN mode** is set to **Automatic**. When this mode cannot be used to access the Internet, set the parameter to **Manual**. In this case, set the parameters related to the SIM card with the information obtained from the carrier.
- Perform operations based on **4G module status**. When **4G module status** is **Connected** and an IP address has been assigned, SmartLogger dialup is successful.

- Method 2: When the SmartLogger connects to the Huawei Hosting Cloud over a wired network, set Ethernet parameters.
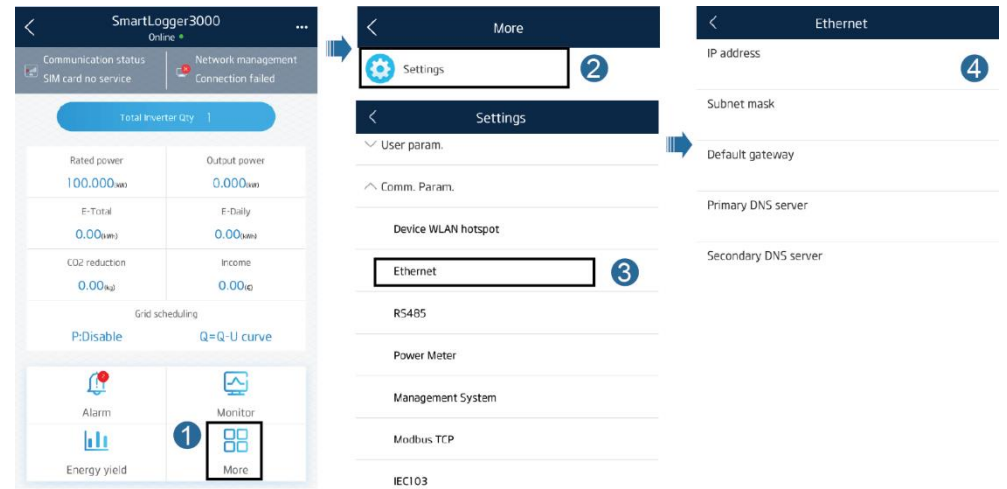
📖 NOTE

- Set **IP address** and **Subnet mask** for the SmartLogger according to the network plan. Ensure that the SmartLogger and the router are on the same network segment and that the SmartLogger has a different IP address from other devices on the LAN.
- Set **Default gateway** and **Primary DNS server** to the IP address of the LAN router.
- If **Primary DNS server** cannot resolve the domain name, use **Secondary DNS server**.

9. Set parameters for connecting the SmartLogger to the Huawei Hosting Cloud.
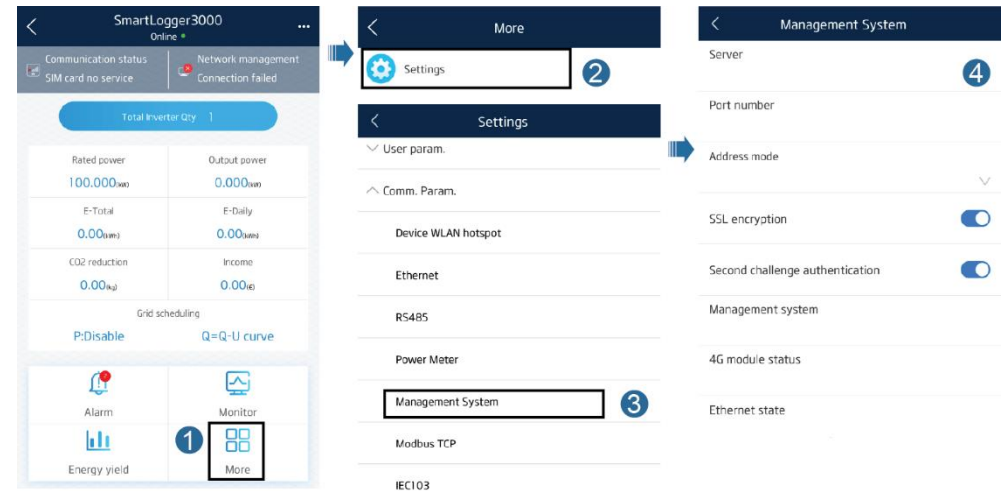
📖 NOTE

- Set **Server** to **intl.fusionsolar.huawei.com** and **Port number** to **27250**.
- Set **Address mode** to **Logical address**. If the communication address of the device connected to the SmartLogger is unique, you are advised to set **Address mode** to **Comm. address**. In other cases, you must select **Logical address**.
- Enable **SSL encryption** and **Secondary challenge authentication**.
- If the status of **Management system** is **Connected**, the SmartLogger is properly connected to the Huawei Hosting Cloud.

4

Enter **https://XX.XX.XX.XX** (SmartLogger IP address, default value: 192.168.0.10 (WAN) /192.168.8.10 (LAN)) in the address box of a browser, log in to the WebUI as **admin**, and configure the SmartLogger as instructed by **Deployment Wizard**. The following steps in this section is only for check and supplement.

📖 NOTE

- Set parameters as prompted. For details, see **Help** on the page.
- The initial password for logging in to the WebUI as **admin** is **Changeme**. When you log in to the WebUI for the first time, you are forced to change the password.
- Use the initial password upon first power-on and change it immediately after login. To ensure account security, change the password periodically and keep the new password in mind. Not changing the initial password may cause password disclosure. A password left unchanged for a long period of time may be stolen or cracked. If a password is lost, devices cannot be accessed. In these cases, the user is liable for any loss caused to the PV plant.
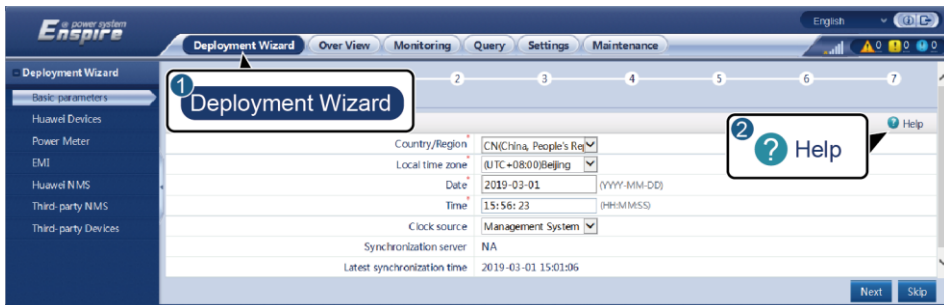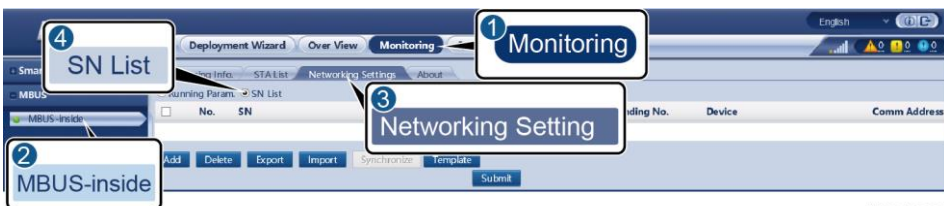

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1. Log in as **admin** and ensure that **Built-in MBUS** is set to **Enable**, click **Submit**.
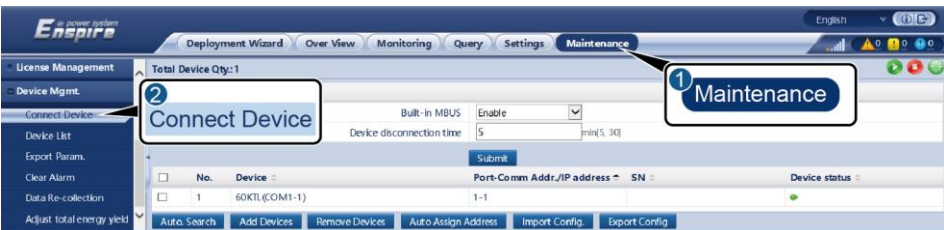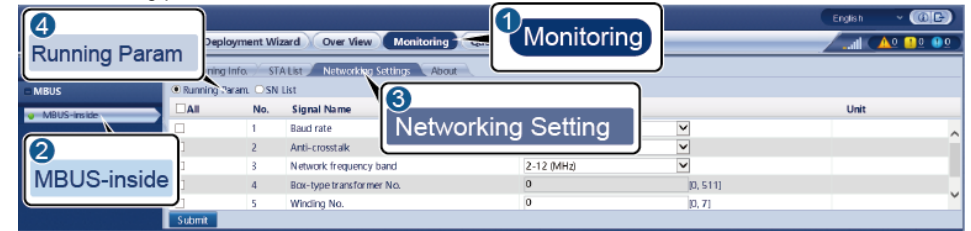

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2. (Perform this step in the MBUS anti-crosstalk scenario). Add the serial number (SN) file of MBUS devices such as inverters.

   - Click **Template** to download the SN file template. Obtain SNs from the PV plant to be built, fill the SNs in the template, and click **Import**.
   - Click **Add** to manually enter the SNs.

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3. Set running parameters, click **Submit**.

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📖 NOTE

- **Baud rate**: Retain the default value **115200** for optimal communications performance.
- **Anti-crosstalk**: If this parameter is set to **Enable**, when **Box-type transformer No.** and **Winding No.** of the inverter are the same as those of the MBUS, or when the inverter SN is in the SN list, the inverter can connect to the SmartLogger over an MBUS network.
- **Network frequency band**: For the United States, set this parameter to **1.7–4.9 (MHz)**. For other areas, retain the default value **2.5–5.7 (MHz)**. Other network frequency bands are reserved.
- **Box-type transformer No.** and **Winding No.**: Set the parameters as required.
- **Networking**: Set this parameter to **Enable** or else the MBUS devices such as the inverter cannot be connected.

4. Add communications devices connected to the SmartLogger.
   - Click **Auto. Search** or **Add Devices** to add devices connected to the SmartLogger. For details about adding devices, see the *SmartLogger3000 User Manual*.
   - If not all devices are detected due to duplicate communications addresses, click **Auto Assign Address** to assign and adjust the addresses as prompted.
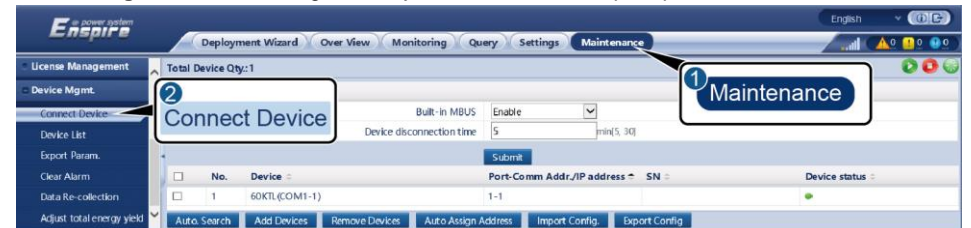
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5. Set the network parameters of the SmartLogger.
   - Method 1: When the SmartLogger connects to the Huawei Hosting Cloud over the wireless network, set **Monthly traffic package** and **Network mode** parameters and click **Submit**.
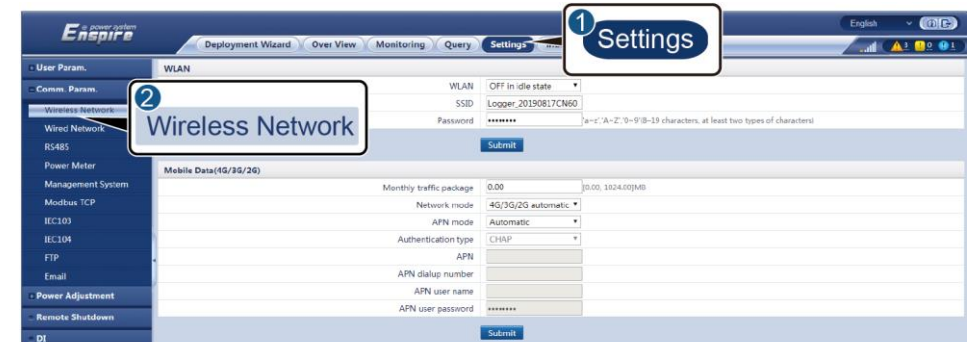
- Set **Monthly traffic package** and **Network mode** based on the SIM card information.
- By default, **APN mode** is set to **Automatic**. When this mode cannot be used to access the Internet, set the parameter to **Manual**. In this case, set the parameters related to the SIM card with the information obtained from the carrier.

● Method 2: Connect the SmartLogger to the Huawei Hosting Cloud over the wired network, and set **Wired Network** parameters and click **Submit**.
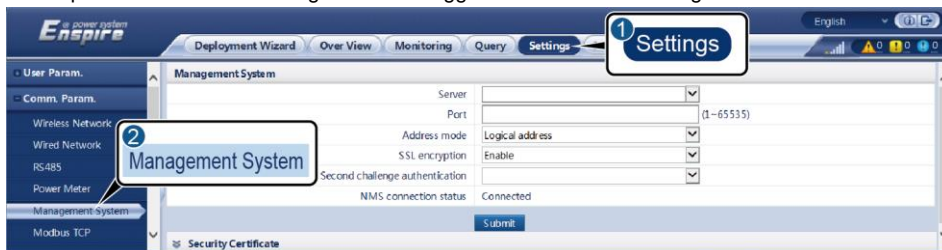

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- Set **IP address** and **Subnet mask** for the SmartLogger according to the network plan. Ensure that the SmartLogger and the router are on the same network segment and that the SmartLogger has a different IP address from other devices on the LAN.
- Set **Default gateway** and **Primary DNS server** to the IP address of the LAN router.
- If **Primary DNS server** cannot resolve the domain name, use **Secondary DNS server**.

6. Set parameters for connecting the SmartLogger to the Huawei Hosting Cloud and click **Submit**.

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- Set **Server** to **intl.fusionsolar.huawei.com** and **Port** number to **27250**.
- Set **Address mode** to **Logical address**. If the communication address of the device connected to the SmartLogger is unique, you are advised to set **Address mode** to **Comm. address**. In other cases, you must select **Logical address**.
- Enable **SSL encryption** and **Second challenge authentication**.
- If the status of **NMS connection status** is **Connected**, the SmartLogger is properly connected to the Huawei Hosting Cloud.

5 Deploying the Management System

You can creat a site by using the FusionSolar app or FusionSolar Web. Select a site deployment mode based on the actual requirements.
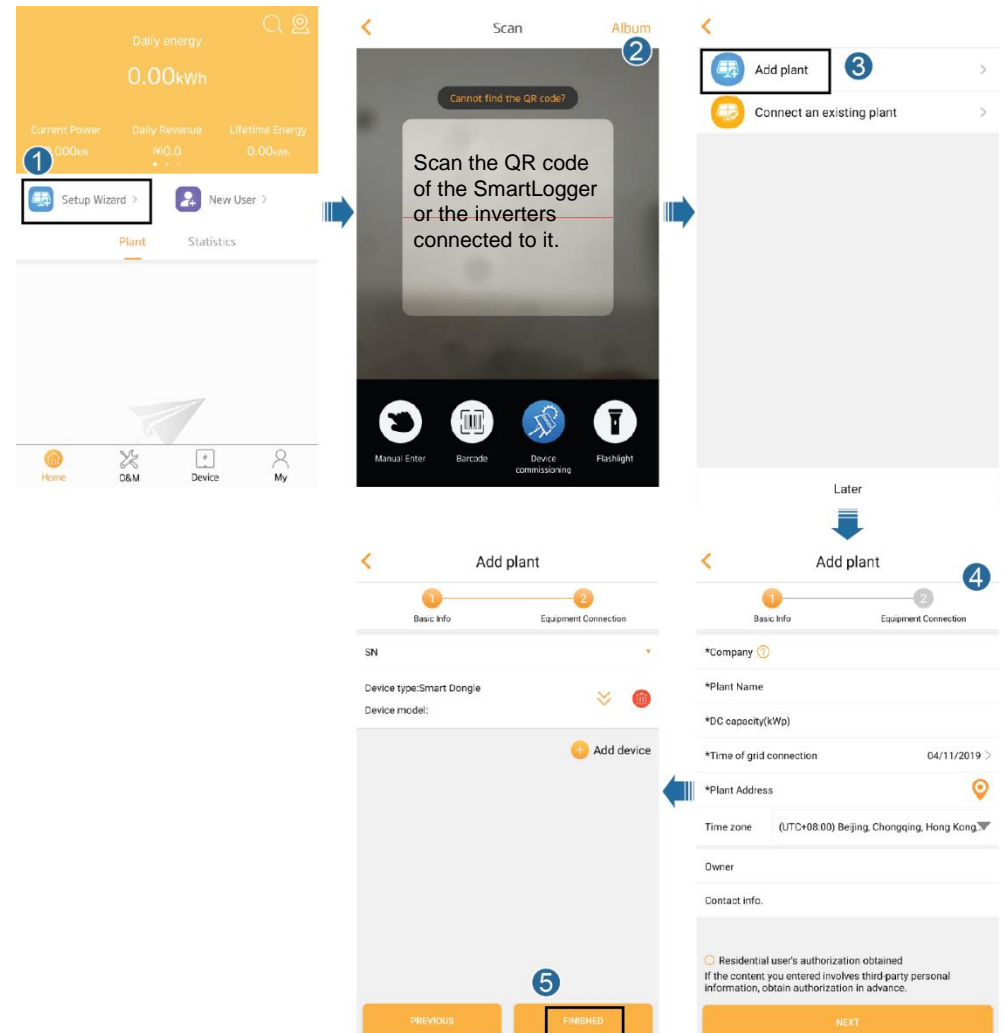
Method 1: FusionSolar app

Before creating a PV plant, ensure that the inverters are properly connected to the SmartLogger which is properly connected the management system.

1. Log in to the FusionSolar app and tap **Setup Wizard**.
2. Enter site information as prompted and tap **Save**.

After the SmartLogger is added, the inverters and smart power sensor/power meter connected to the SmartLogger are automatically added. Select the corresponding PV plant and check the device status. Ensure that the devices are correctly added.

Method 2: FusionSolar Web

📖 NOTE
- Before site deployment, ensure that the inverters and SmartLogger are powered on and the communication is normal.
- Ensure that you have matched the devices in a PV plant with the PV plant with the help of the installation contractor.
- Before creating a PV plant, ensure that you have obtained the login account and password from the installation contractor or Huawei service engineer. If no account or password is available, create an account.

1. Enter the Huawei Hosting Cloud address **https://intl.fusionsolar.huawei.com** in the address box of a browser. Log in to the Huawei Hosting Cloud. If no account or password is available, create an account.

📖 NOTE
- Use Internet Explorer 11, Chrome 67, Safari 9.0, or a later version. Otherwise, exceptions may occur.
- The installation contractor can be registered by email address. Select a registration mode based on actual requirements.

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2. Create a PV plant.

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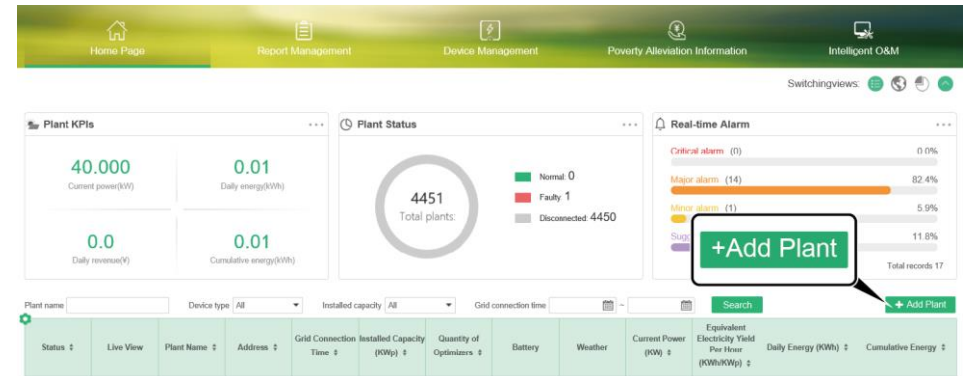
3. Enter the basic information, access device, string configuration, electric price configuration, other information, and camera information based on the site requirements.
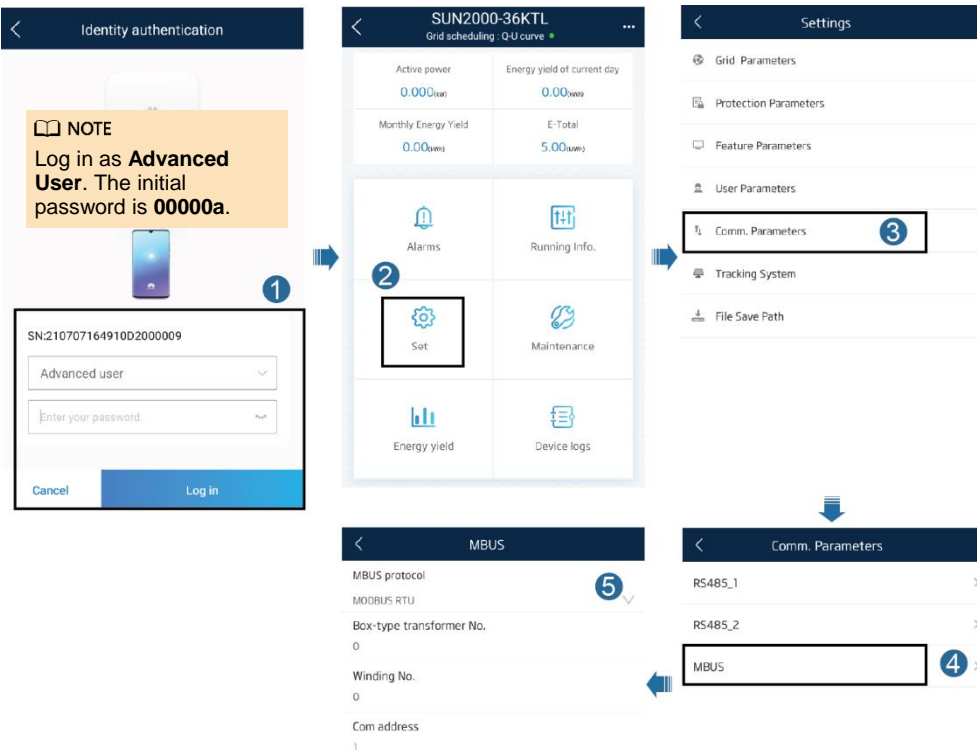

📖 NOTE
- Enter the SN and name of the SmartLogger. After the SmartLogger is added, the inverters and smart power sensor connected to the SmartLogger are automatically added.
- If the capacity of the PV plant is greater than 25 kWp, the **Camera Information** tab page is displayed.

4. Click **Save**.
   The PV plant is successfully created.

Setting MBUS Parameters for the Inverters

Log in to the FusionSolar app. Tap **My** and choose **Device Commissioning**, scan the QR code or bar code of the WLAN module or Bluetooth module or connect a USB data cable, a Bluetooth module, or a WLAN module to the USB port of the inverter to implement communication between the inverter and the app. Set RS485 communications parameters for the inverters.

NOTE

- **MBUS protocol**: MODBUS RTU.
- **Box-type transformer No.**: Set the number of the transformer stations connecting to the inverters.
- **Winding No.**: Set the number of the windings connecting to the inverters.
- **Com address**: The value ranges from 1 to 247. Set this parameter as planned. The value must be unique. If there is no location requirement, you do not need to set this parameter. The SmartLogger automatically allocates the value.
- Use the initial password upon first power-on and change it immediately after login. To ensure account security, change the password periodically and keep the new password in mind. Not changing the initial password may cause password disclosure. A password left unchanged for a long period of time may be stolen or cracked. If a password is lost, devices cannot be accessed. In these cases, the user is liable for any loss caused to the PV plant.
- When the inverter is powered on for the first time or restored to factory settings, the **Quick settings** page is displayed when you log in to the app. You can set the parameters according to the actual situation.