Fox ESS Hybrid Inverter Commissioning Guide

Version: 1.0
Created By: Fox ESS After-Sales Department

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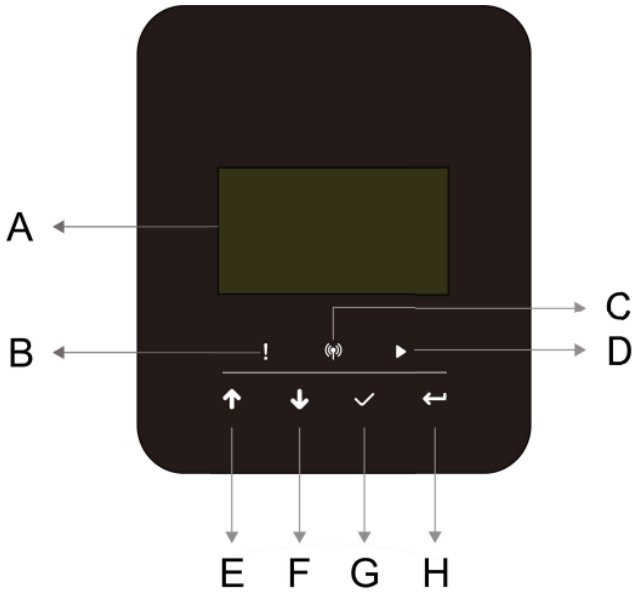
1. Initial Inverter Setup

After completing all connections, follow these steps to power on the inverter:

- **Power On**:
  Turn on the DC isolator on the inverter. The LCD screen (labeled as "A" in Figure 1) will light up, displaying the inverter's information. The function buttons will be used for navigating the setup options.

Figure 1: Control Panel Overview



Object	Name	Function
A	LCD screen	Display the information of the inverter.
B	Indicator LED	Red: The inverter is in fault mode.
C		Blue: The inverter is normally connected to the battery.
D		Green: The inverter is in normal state.
E	Function button	Up button: Move cursor to upside or increase value.
F		Down button: Move cursor to downside or decrease value.
G		OK button: Confirm the selection.
H		Return button: Return the previous operation.

- **Using the Function Buttons**:
  - **Up Button (E)**: Moves the cursor up or increases values.
  - **Down Button (F)**: Moves the cursor down or decreases values.
  - **OK Button (G)**: Selects or confirms an option.
  - **Return Button (H)**: Returns to the previous menu.

1.1. Language Selection:

When the inverter starts up, it will prompt you to select a language. Use the Up and Down buttons to navigate and the OK button to select English.

1.2. Standard Selection:

Next, the inverter will ask you to choose the country standard. Select AS4777_AU-2020A for Australia. Confirm the selection using the OK button.

For detailed instructions on meter and CT setup, see Section 2: Meter Connection and Section 3: CT Connection.

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2. Meter and CT Connection

This section explains the proper wiring solutions for different setups involving meters and current transformers (CTs), including scenarios where additional inverters or meters are used.

PIN	1	2	3	4	5	6	7	8
Definition	Meter485A	Meter485B	485B	485A	CT2+	CT2-	CT1-	CT1+

2.1. Meter Connection

Follow these steps to connect the meter:

- **Compatibility**:
  Only use compatible meters, such as DDSU666 (CHINT) or SDM230 (EASTRON), as specified by Fox ESS.
- **Wiring the Meter**:
  - **Live and Neutral Connections**: Connect the Live Wires to Pins 1 & 2 and the Neutral Wires to Pins 3 & 4 on the meter.
  - **Communication Cable**: Connect Pin 7 from the meter to Pin 1 on the inverter's communication port and Pin 8 from the meter to Pin 2 on the inverter.

2.2. CT Connection

Follow these steps to connect the CT:

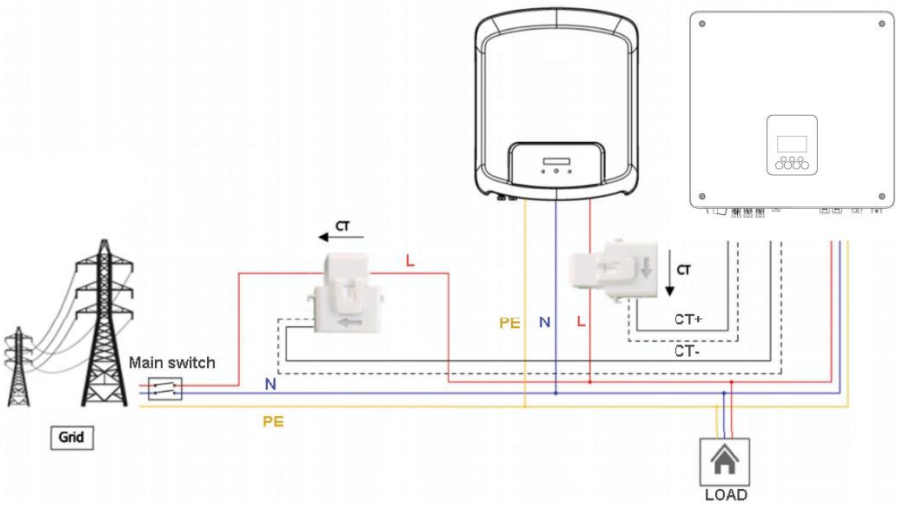
1. **Installing the CT**:
   The CT should be clamped on the main line of the grid side. Ensure the arrow on the CT points toward the grid for accurate current flow measurement.
2. **Wiring the CT**:
   - Connect the CT Positive Wire (Red) to Pin 8 (CT1+) on the inverter.
   - Connect the CT Negative Wire (Black) to Pin 7 (CT1-).

2.3. If Another Inverter Is Connected

In cases where an additional inverter or generator is present, use the following wiring solutions:

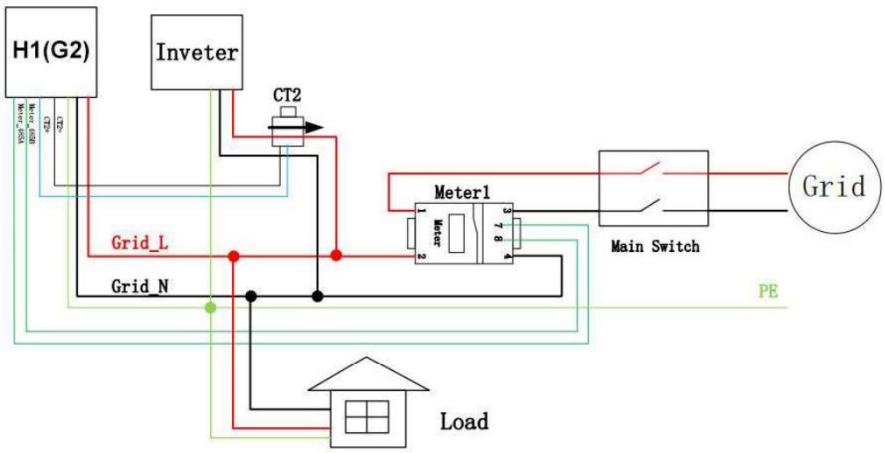
2.3.1 Wiring Solution for CT1 & CT2

- **CT1**:
  - Connect the Red Wire to Pin 8 (CT1+) on the inverter.
  - Connect the Black Wire to Pin 7 (CT1-) on the inverter.
  - **Direction**: CT1 should be clamped with the arrow pointing towards the grid.
- **CT2**:
  - Connect the Red Wire to Pin 5 (CT2+) on the inverter.
  - Connect the Black Wire to Pin 6 (CT2-) on the inverter.
  - **Direction**: CT2 should be clamped with the arrow pointing towards the load. This CT will be placed on the production or output line of another inverter to accurately measure the power generated.



2.3.2 Wiring Solution for Meter1 & CT2

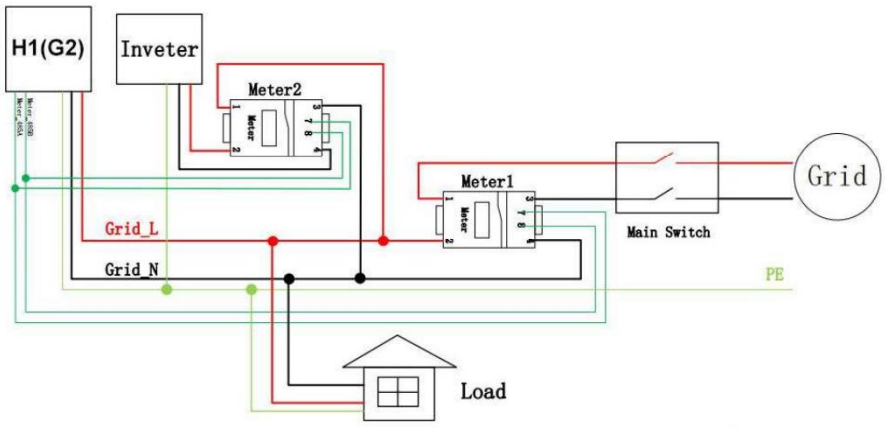
1. **Meter1**:
    - **Live and Neutral Connections**: Connect the Live Wires to Pins 1 & 2 and the Neutral Wires to Pins 3 & 4 on the meter.
    - **Communication Cable**: Connect Pin 7 from the meter to Pin 1 on the inverter's communication port and Pin 8 from the meter to Pin 2 on the inverter.
2. **CT2**:
    - Connect the Red Wire to Pin 5 (CT2+) on the inverter.
    - Connect the Black Wire to Pin 6 (CT2-) on the inverter.
    - **Direction**: CT2 should be clamped with the arrow pointing towards the load. This CT will be placed on the production or output line of another inverter to measure the generated power.



2.3.3 Wiring Solution for Meter1 & Meter2

1. **Meter1**:
    - **Live and Neutral Connections**: Connect the Live Wires to Pins 1 & 2 and the Neutral Wires to Pins 3 & 4 on the meter.
    - **Communication Cable**: Connect Pin 7 from the meter to Pin 1 on the inverter's communication port and Pin 8 from the meter to Pin 2 on the inverter.
2. **Meter2**:
    - **Live and Neutral Connections**: Connect the Live Wires to Pins 1 & 2 and the Neutral Wires to Pins 3 & 4 on the second meter.

- **Communication Cable**: Connect Pin 7 from the second meter to Pin 4 on the inverter's communication port and Pin 8 from the second meter to Pin 3 on the inverter.



2.4 Configuring Meter/CT and Setting Export Limit on Inverter

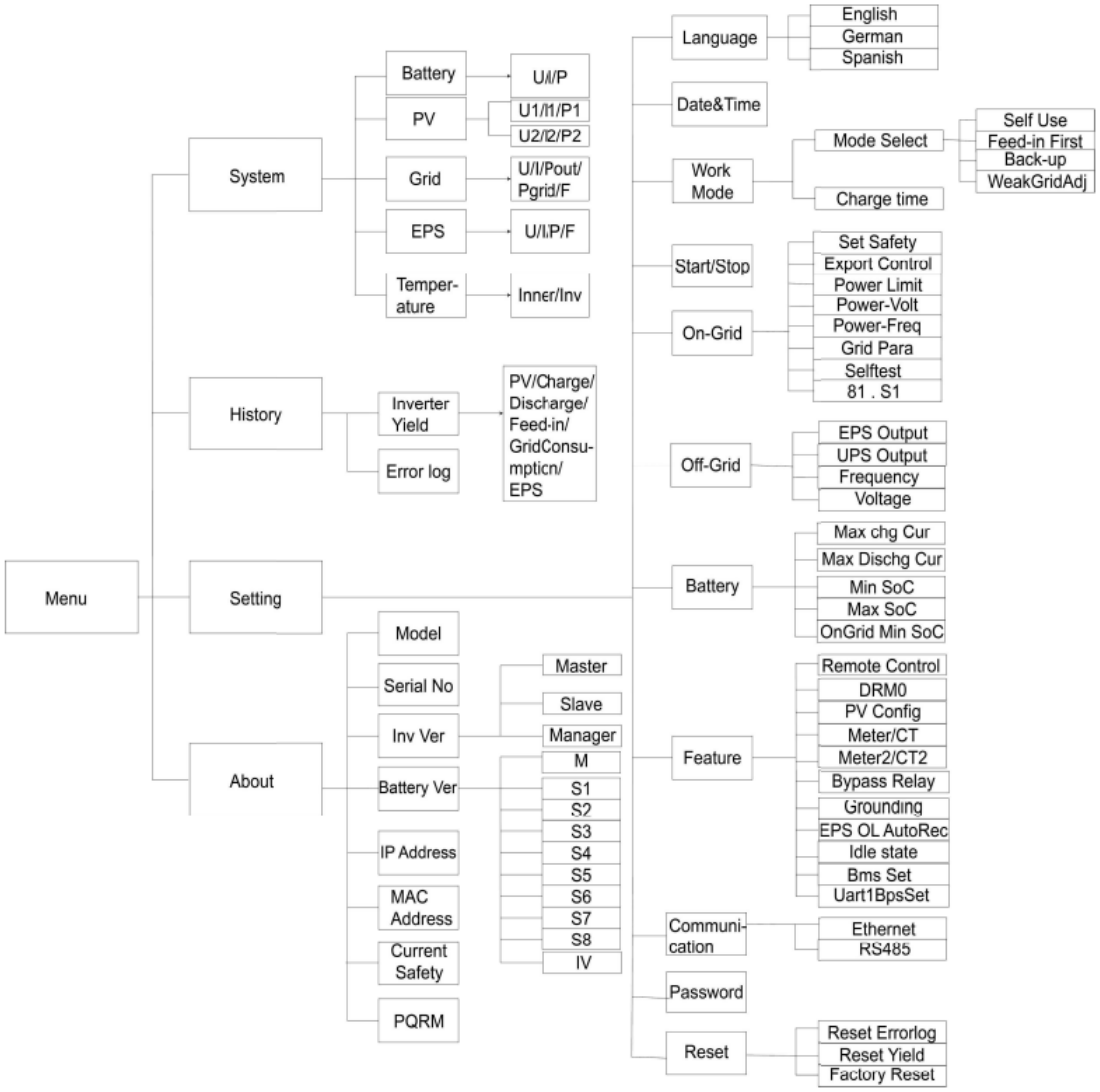
After connecting the meter and CT, follow these steps to configure the settings on the inverter:

1. **Access Settings**:
   Use the up and down buttons on the inverter's control panel to scroll until you find Settings. Press the OK button to enter the settings menu.

2. **Select Meter/CT Settings**:
   Scroll using the Up and Down buttons until you find Feature Parm. Press the OK button to select. Choose Meter/CT and use the Up and Down buttons to select the appropriate configuration based on your setup (e.g., Meter1, Meter2, CT1, or CT2). Press OK to confirm your selection.

3. **Export Limitation Settings**:
   Navigate to On-Grid Parm > Export Control using the Up and Down buttons. Set the Soft Limit in Watts to control the maximum amount of power exported to the grid. Set the Hard Limit: If communication with the meter or CT is lost or if the export exceeds the set limit, the inverter will disconnect from the grid to prevent overloading. Use the OK button to save each setting.

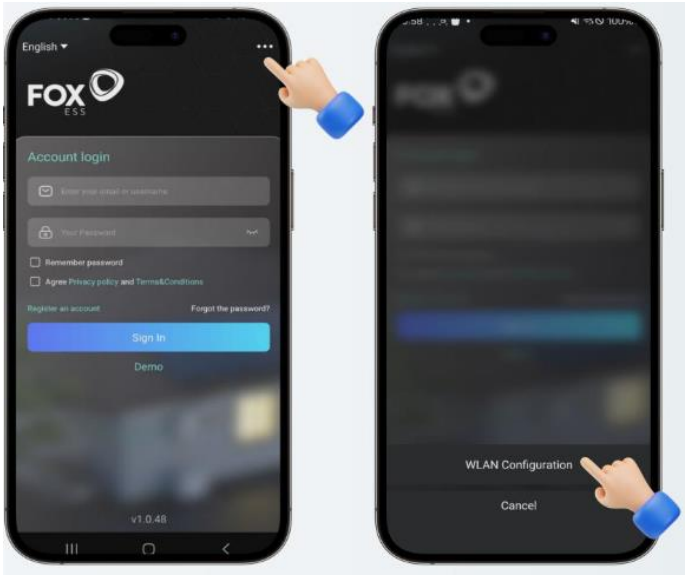
Tip: Double-check all settings to ensure compliance with local regulations and to optimize system performance.


Menu
System
Battery
U/I/P
PV
U1/I1/P1
U2/I2/P2
Grid
U/I/Pout/
Pgrid/F
EPS
U/I/P/F
Temper-
ature
Inner/Inv
History
Inverter
Yield
PV/Charge/
Discharge/
Feed-in/
GridConsu-
mptcn/
EPS
Error log
Setting
About
Model
Serial No
Inv Ver
Master
Slave
Manager
Battery Ver
M
S1
S2
S3
S4
S5
S6
S7
S8
IV
IP Address
MAC
Address
Current
Safety
PQRM
Language
English
German
Spanish
Date&Time
Work
Mode
Mode Select
Self Use
Feed-in First
Back-up
WeakGridAdj
Charge time
Start/Stop
On-Grid
Set Safety
Export Control
Power Limit
Power-Volt
Power-Freq
Grid Para
Selftest
81 . S1
Off-Grid
EPS Output
UPS Output
Frequency
Voltage
Battery
Max chg Cur
Max Dischg Cur
Min SoC
Max SoC
OnGrid Min SoC
Feature
Remote Control
DRM0
PV Config
Meter/CT
Meter2/CT2
Bypass Relay
Grounding
EPS OL AutoRec
Idle state
Bms Set
Uart1BpsSet
Communi-
cation
Ethernet
RS485
Password
Reset
Reset Errorlog
Reset Yield
Factory Reset

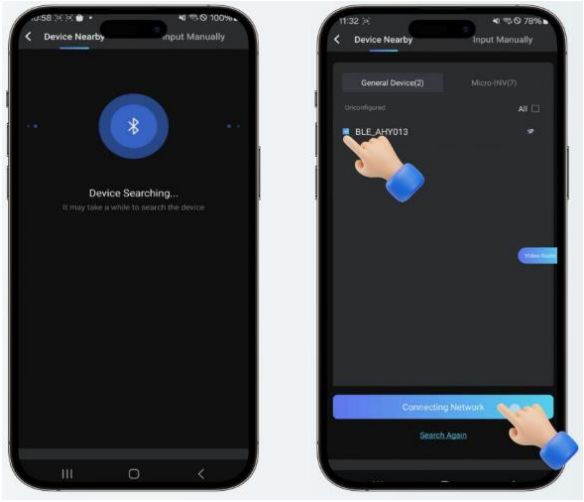
4. WiFi Configuration

Follow these steps to set up the WiFi connection on your Fox ESS inverter:

- **Step 1: Install the Wi-Fi Stick**
    - Unbox the Wi-Fi Stick and locate the "WIFI/4G/USB" port on the inverter.
    - Insert the Wi-Fi Stick into the port securely.
    - Download *Fox Cloud 2.0*: Search for and download the *Fox Cloud 2.0* app from the App Store or Google Play Store.
- **Step 2: Configure Wi-Fi Using the Fox Cloud 2.0 App**
    - Open the *Fox Cloud 2.0* app on your smartphone.
    - **Access WLAN Configuration**:
        - Tap the three dots in the top right corner and select "WLAN Configuration."
        - Enable Bluetooth if prompted.

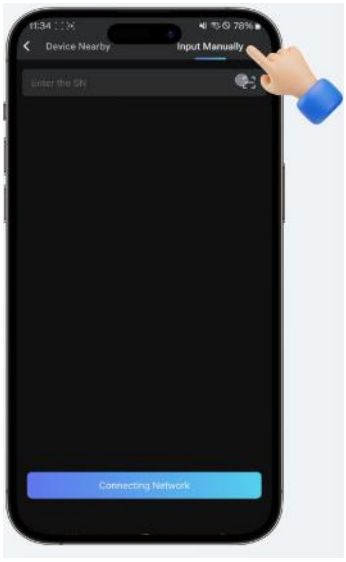


    - **Search for the Device**:
        - The app will search for nearby devices. If your data logger appears, tap on it and select "Connecting Network."
        - If you see "No device found," refer to Step 3 for manual input.



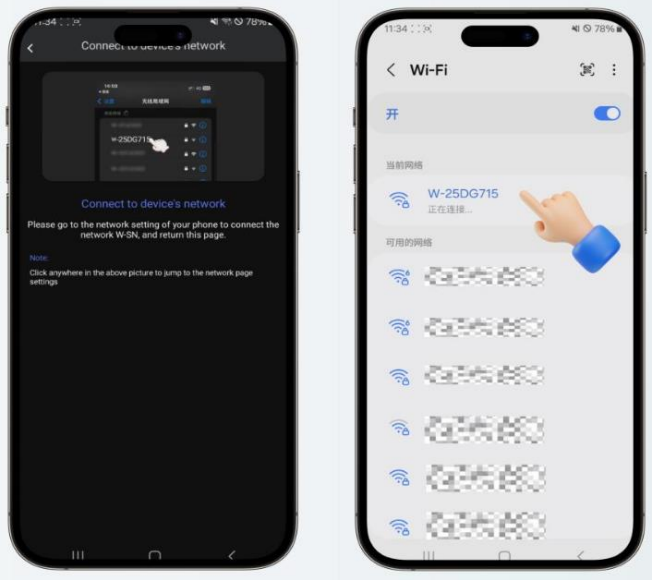
- **Connect to Wi-Fi**:
  - Select your home Wi-Fi network, enter the password, and tap "Next" to start the configuration.
- **Configuration Complete**: A message will confirm successful setup.

- **Step 3: Manually Input the Data Logger's Serial Number (if needed)**
  - Select "Input Manually" in the app.



  - **Enter the Serial Number (SN)**:
    - Type the SN manually or scan the QR code on the data logger.

- **Connect to Wi-Fi**:
    - After entering or scanning the serial number, tap on "Connect Network" at the bottom of the screen.
    - The app will take you to your phone's Wi-Fi settings. If not, then go to your Phone’s Wi-Fi settings.
    - Connect to Wi-Fi with the SSID "W-" followed by a 7-digit number. The password is "**mtmt2020**".
    - Go back to Fx cloud 2.0 app
    - From the drop-down menu, select your home Wi-Fi network (SSID).
    - Enter your Wi-Fi password and tap "Next."
    - If you encounter a message stating "Local environment error," select your home Wi-Fi again, re-enter the password, and hit "Next."



- **Configuration Complete**: Wait about 1 minute for the device to connect. Tap "OK" to finalize.

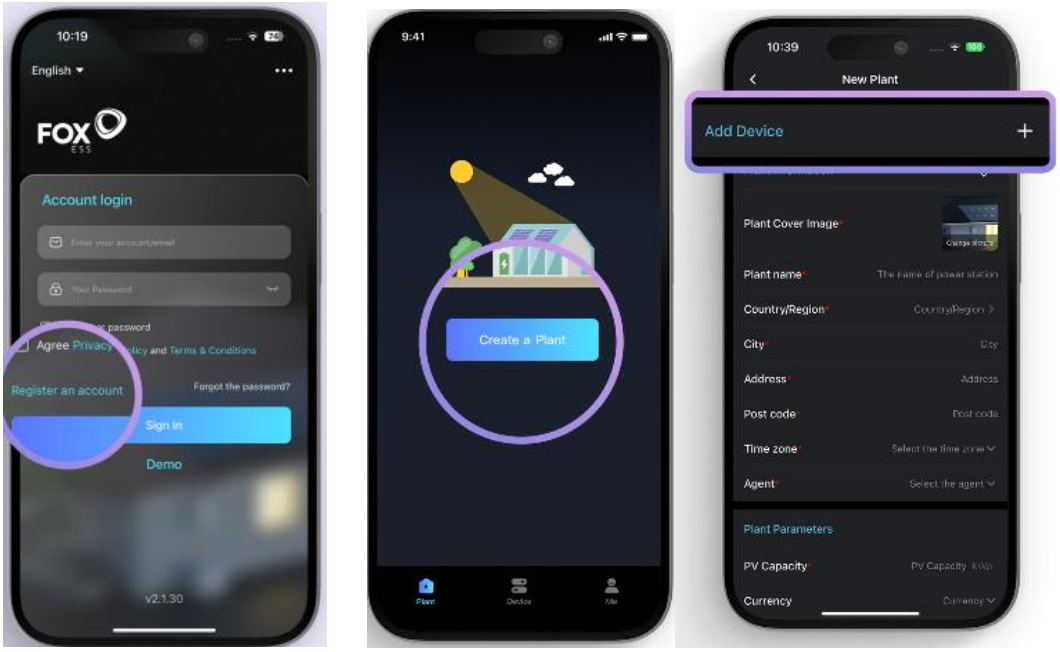
- **Step 4: Check Connection Status**
    - **Red Light Blinking Rapidly**: Not connected to WiFi.
    - **Red Light Blinking Slowly**: Successfully connected to WiFi.

5 Creating a Plant

Follow these instructions to set up your plant in the *Fox Cloud 2.0* app:

5.1. If the End user Creating a Plant:

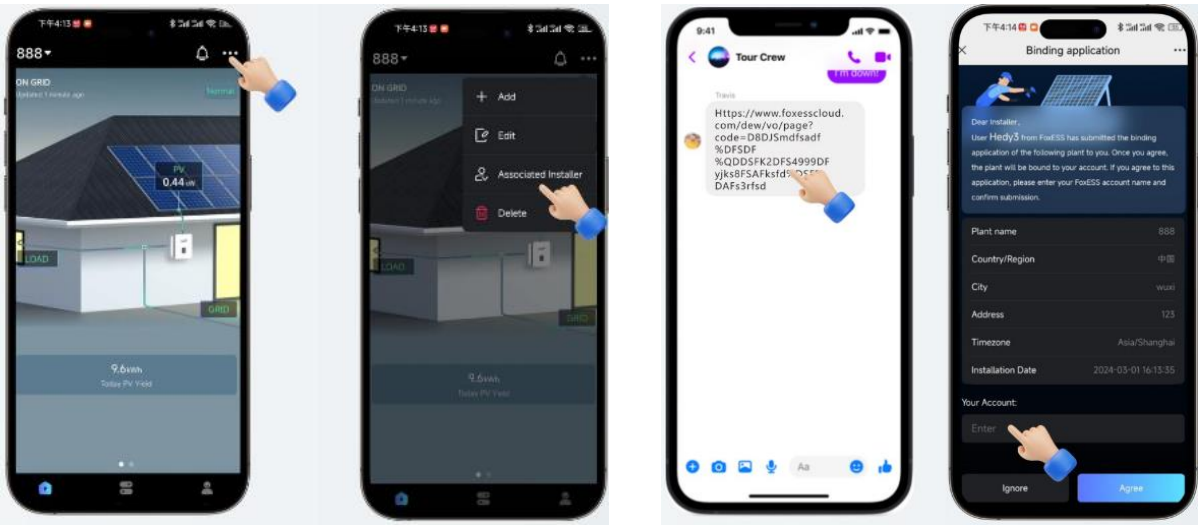
- **Register an Account**: If Enduser don't already have an account, download the *Fox Cloud 2.0* app from the App Store or Google Play Store. Open app and select "Register an account" select "I am an Owner", Follow the registration steps as guided within the app.
- **Fill in the Information**: Enter your username and select your password. When prompted, enter the data logger serial number (SN) in the appropriate field, and click "Submit."



- **Create Your Plant**:
  - Open the app and click the "Create a Plant" button on the home page.
  - Click the "+" button next to "Add Device" to add your inverter.
  - Scan the QR **code on the Data logger** or manually enter the SN. Ensure the details are correct and click "Confirm" to proceed.
  - Fill in the required plant details, including the plant name, location, system type, and any other requested information. Once all details are entered, click "Save" to finalize the setup.

- **Final Configuration**: Once you save the plant details, the app will begin configuring the plant. This process may take 1-3 minutes. Afterward, scroll down and refresh the page to confirm the status and ensure everything is correctly configured.

- **Assigning an Installer**: If you want your installer to monitor your inverter, you need to associate the installer with your plant:
  - Click the three dots in the top right corner of the app's home page.
  - Select "Associated Installer" from the menu, and a link will be generated. Share this link with your installer via a message.
  - The installer will then open the link, enter the Username of his installer account, and click "Agree" to complete the process.



5.2. If the Installer Is Creating a Plant:

- **Register an Account**: The Installer needs to download the *Fox Cloud 2.0* app and register an account selecting "I am an installer" if you haven't done so already.

- **Fill in the Information**: Enter your username and select your password. When prompted, please enter your email address in the appropriate field. You will receive a verification code in your email; please enter it in the appropriate field and click "Next Step."

- **Create Your Plant**:
  - Open the app and click the “Create a Plant” button on the home page.
  - Click the “+” button next to “Add Device” to add your inverter.
  - Scan the QR **code on the Data logger** or manually enter the SN. Ensure the details are correct and click “Confirm” to proceed.
  - Fill in the required plant details, including the plant name, location, system type, and any other requested information. Once all details are entered, click “Save” to finalize the setup.

- **Final Configuration**: Wait 1-3 minutes, then scroll down and refresh to see the status.
- **End-user Access** :
  - **Register an Account**: If the installer has created a plant End user just needs to download the *Fox Cloud 2.0* app from the App Store or Google Play Store. Open the app and select ”Register an account” select “I am an Owner”, and Follow the registration steps as guided within the app.
  - **Fill in the Information**: Enter your username and select your password. When prompted, enter the data logger serial number (SN) in the appropriate field, and click “Submit.”
  - Wait 1-3 minutes, then scroll down and refresh to see the status.