

Guide for PCS initialization Process

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1. Introduction

1.1 What is EMA Manager

EMA Manager is a one-stop application specially made for APsystems registered professional solar installers. The content of the EMA Manager is the APP version of features available in installer account via the web portal.

The EMA Manager APP will allow installers to register end-users, new PV systems, to monitor performance and ensure easy access to all key data without having to log into their laptop.

1.2 About this Guide

This document introduces the PCS initialization Process function.

1.3 Need to Know

Once the PCS initialization process operation is completed, the next local access will directly enter the local home page.

2. Local Access: PCS initialization

The APstorage PCS has been designed with local connection and management functionality. You can access this local functionality through EMA Manager.

2.1 Connect Device

Click "Local access" to enter this function.

On the **[Connect Device]** page, you can see two entrances for connecting devices, which respectively correspond to devices of ECU and devices of APstorage. Here, we will mainly explain how to connect the APstorage devices.



We provide two ways to connect to the energy storage device. One is to connect via hotspot, which is mainly for ELS-5K models devices, and the other is to connect via Bluetooth, which is for ELS-11.4 and ELT-12 models devices.

2.1.1 Hot-spot AP connection supported

- Step 1: Click "APstorage".
- Step 2: Click "Connect" as indicated in the picture to open Wi-Fi setting in your smartphone,
- Step 3: Connect to the hot spot of the APstorage PCS, the format of the hot spot is ECU-WIFI_XXXX, XXXX being the last four digits of the built-in ECU.



 Step 4: Return to the EMA Manager and you will find a prompt indicating a successful connection on the page. After that, check the option *"Connected AP hotspot or Bluetooth"* and then you can click *"Next Step"* to the next item.

Note: If a pop-up window appears indicating *"AP hotspot connection failed"* when you go back, please repeat step 2.



2.1.2 Bluetooth connection supported

- Step 1: Click "APstorage".
- Step 2: Click "Connect" as indicated in the picture to enter the device's Bluetooth list.
- Step 3: Choose and connect to the Bluetooth of the APstorage PCS, the format of the Bluetooth is PCS_BXXXXXXXXXX, BXXXXXXXXX being the device UID.

- Step 4: Wait for the device connection status to be updated, and you will find a prompt indicating a successful connection on the page. After that, check the option *"Connected AP hotspot or Bluetooth"* and then you can click *"Next Step"* to the next setting.
- **Note:** If the device fails to connect, please check whether the device is working properly and then repeat step 2.

09:34 <	୍ଦ୍ଧ K 🕾 🖬 72% 🕯 Connect Device	09:34 🕺 🐇 ® 🖬 71% 🖬 < < Connect Device	09:34 ⁰ 씨 중 교1 71% 🛍 < Connect Device
Choose the device type you connect Provide you with precise service		Connect via AP Mode or Bluetooth APstorage is not connected to current APP	Connect Bluetooth Please ensure that the device is running and keep the phone as close as possible to the device that needs to be connected $\mathcal{P}_{\rm res}^{\rm L}$
-	ECU The communication unit of the PV system, which completes data collection and functional control functions. You can do the monitoring and control via AP Hotspot or LAN.	Connect to the device AP hotspot or Bluetooth to enter the APstorage commissioning mode. If there are multiple APstorage devices in the system and parallel setting is required, please connect the APstorage with battery for commissioning.	PCS_B050000 de al
	APstorage APstorage can be used in connection with PV systems or independently to optimize household electricity consumption. You can do the monitoring and control via AP Hotspot, LAN or Bluetooth.	1.Hot-spot AP connection supported AP hotspot connection for ELS-5K models 2.Bluetooth connection supported Bluetooth connection for ELS-11.4 and ELT-12 models	
	Step 1: Click "APStorage"	Step 2: Click "connect"	
		Next Step	

2.2 Energy Storage Debugging

This is an operation progress wizard. The steps that have been completed will be marked with a green tick

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2.3 Basic Configuration

2.3.1 Wi-Fi

Click "Basic Configuration" and enter [Wi-Fi] page to configure the network for the energy storage machine.

Note

You can skip this configuration and directly proceed to the next setting. But this will prevent the subsequent configuration for "Software Upgrade" settings item from being carried out.

- Select the network to connect,
- Enter the correct password,
- Click the "Connect to Network" button to configure the network.



2.3.2 Primary Parameters

On this page, you can configure the main operating parameters for the energy storage machine to ensure normal operation.

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< Prima	ry Parameters
Connected 2150000525 close enough to the dev	24, make sure your phone is ice!
0	•
Primary Parameters Configure the main operating machine to ensure normal operation	parameters for the energy storage ration.
PV System	>
Unconfigured	
Connect a PV system. If yo make sure the ECU is in the use the third-party PV syste	u use the APsystems PV system, same LAN with the APstorage. If you m, you need to install a contactor.
Grid Profile *	>
Unconfigured	
Clarify the grid standards u comply with laws and regul performance tuning.	sed by the energy storage machine to ations and achieve optimal
Battery Company *	>
Unconfigured	
Collect the battery compan	y,type and ID.
Third-Party Generator	>
Unconfigured	
Connect to a third-party get electricity consumption.	nerator to optimize household

2.3.2.1 PV Systems

Click *"PV Systems"* button, then enter the specific function configuration page. Different choices correspond to different subsequent system self-checking items.

Note

- Pure Energy Storage System: Save the off state and not associated with the PV system. You can see the system's self-inspection content in "2.4.2 Pure Energy Storage System self-checking".
- APsystems PV system: Choose "APsystems PV system" to be associated with the Apsystems' ECU. You can check the relevant self-checking content in "2.4.1 APsystems PV System self-checking".
- Third-Party PV System: Check "Third-party PV system" and associate the APstorage with the third-party PV system. Relevant self-checking content can be found in "2.4.3 Third-party PV System self-checking".
- > Here, we will provide a detailed introduction to the APsystems PV system.
 - Step 1: Confirm the wiring situation according to the illustration.
 - Step 2: Check *"APsystems PV system"* and click *"Add ECU"* button to select the way (will be introduced below) you want to add the ECU.
 - Step 3: After entering the ECU ID, click the **"OK"** button to complete the settings.

Note: At this time, if you enter this settings page again, the connection status of the ECU and APstorage PCS will be updated.



> The following is an explanation of these three adding methods in the "Step 2".

• Automatic search

If you select the *"Automatic search"* option, the device will actively search for surrounding APsystems' ECU that support connection.



Scan

Scan the ECU ID on the photovoltaic ECU correctly according to the picture.



Manual input

Manually enter the ECU ID that needs to be associated.



2.3.2.2 Grid Profile (Required)

Click to enter the configuration page of the **[Grid Profile]** function. On this page, you will be able to select the power grid standard to be configured.



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< Primary Para	meters	< Grid Profile		< Grid Pi	rofile
Connected 215000052524, mak close enough to the device!	e sure your phone is	Grid Profile Clarify the grid standards used by the energy with laws and regulations and achieve optim	yy storage machine to comply nal performance tuning.	Reconnect time *10-600s 300	1
Primary Parameters Configure the main operating parameter:	s for the energy storage	Country/Region * Common		Start AC frequency high *50.1-5 50.5	5Hz
machine to ensure normal operation. PV System	>	Set Standard * default for 50Hz grid	↓ _	Start AC voltage low *180-215V 187	2
APsystems PV system Connect a PV system. If you use the APsystems PV system, make sure the FCU is in the same LAN with the APstocane If you		To restore all parameters to their default va Restore Defaults only restores the number distribute the settings.	lues, click Restore Defaults . of straights, and does not	Start AC voltage high *253-265 253	_
use the third-party PV system, you ne Grid Profile *	ed to install a contactor.	Over voltage limit2 *220-277V 264	_	Volt-watt response mode	\bigcirc
Unconfigured	Click here	Over voltage trip time2 *0.02-610s 0.05	_	20	wer gradient *0-100%Prate/V
Clarify the grid standards used by the comply with laws and regulations and performance tuning.	e energy storage machine to d achieve optimal	Over voltage limit3 *220-270V		Over voltage power limit over vo 264	oltage *240-264V
Battery Company *	>	253 Over voltage trip time3 *0.02-610s	2	Over voltage power limit start vo 250	oltage *235-255V
Unconfigured Collect the battery company,type and	ID.	0.05	1	Over frequency power limit ram	p up frequency *50.1-
Third-Party Generator	>	Over voltage limit4 *220-277V 264	<u>an</u>	50.1	
Unconfigured		Over voltage trip time4 *0.02-610s			
Connect to a third-party generator to electricity consumption.	optimize household	0.05	Ľ	ÖK	
			_		

2.3.2.3 Battery Company (Required)

Click *"Battery Company"* button to obtain the detailed configuration of the battery in terms of company, model and serial number.



- This is a mandatory configuration item with icon "* ".
- There are two ways to add the serial number, namely manual input and scanning the Barcode or QR code.
- Only 16 batteries can be added at most.
- Select "Battery Company",
- Select "Battery Model",
- Click "I to add battery serial number by scanning or manual input,
- Click "OK" to complete.



2.3.3 Software Upgrade

After completing the configuration of **[Primary Parameters]**, the next step, you will enter the *"Software Upgrade"* settings item. On this page, you can know whether the currently connected APstorage PCS needs to be upgraded.



14:49	^{0.41} ്≼ି ଲାଣ 100% ∎
	Software Upgrade
Connected close enoug	215000 make sure your phone is gh to the device!
o —	oo
Software If the software ensure APstor generally and	Upgrade a version is not up to date, please upgrade it first to age running normally. It may takes 30 minutes at most do not logout the APP during the process of upgrade.
<u>.</u>	Current Version: 1
	Check for updates
Upgrade	Progress: 0%
_	
	Start Upgrade
	Next Step

2.4 System self-checking

After completing all the previous configurations, you will enter the *"Energy Storage Debugging"* page. Access the **"System self-checking"** page, and it will guide us to conduct inspections of the device.



- Click "System self-checking", enter the [System self-checking] page,
- Confirm the message and click **"OK"** in the pop-up window,
- Click "Start Check" to get inspecting.



2.4.1 APsystems PV System self-checking

If you selected the "APsystems PV system" in Chapter 2.3.2.1, its self-checking items are as follows.



2.4.1.1 Off-grid system

Check "Off-grid" and click "OK" to update the display of inspection items.



The content of the self-checking items for the off-grid system is as follows.



2.4.1.2 On-grid system

Here is the inspection process for the on-grid system.



Note

When checking "Grid-side CT check" and "Grid-side CT check", a pop-up window as shown in the following figure will appear on the page, allowing you to choose whether to perform the corresponding self-checking.



Skip Inspection Skip Inspection

After completing the above process, you will see a pop-up window indicating that the self-checking has been completed. (Please see **"3.Home Page"**)

2.4.2 Pure Energy Storage System self-checking

Not associated with the PV system: When setting **"PV System"**, choose not to enable it. Here is the self-checking menu items for on-grid system and the off-grid system.



2.4.3 Third-Party PV System self-checking

Associated with the Third-party PV system: When setting "PV System", you choose the "Third-Party PV System" to set.

The self-checking menu items for on-grid system and the off-grid system is as follows:



3. Home Page

Once the system self-checking is completed, click the *"Go to the home page"* button in the pop-up window to enter the local homepage.



Note: If you don't click the *"Go to the home page"* button, the self-check step will still be entered during the next local access.