

EMA APP User Manual (PV Version)

V8.14.0

APsystems EMEA

Karspeldreef 8, 1101 CJ Amsterdam Phone: +31 (0)85 3018499 Email: info.emea@APsystems.com emea.APsystems.com

APsystems France

22 avenue Lionel Terray 69330 Jonage France Phone: 031-10-2582670 Email: info.emea@APsystems.com emea.APsystems.com

© All Rights Reserved

Table of Contents

In	trodu	ction.		1
1.	APP	Down	load	2
2.	Syste	em Co	nfiguration	3
	2.1	Regis	ter Account	. 3
		2.1.1	Account Information	. 4
		2.1.2	Device Information: ECU Information	. 5
		2.1.3	Device Information: Inverter Information	. 7
	2.2	ECU I	nitialization	10
		2.2.1	Link Inverters	10
		2.2.2	Network Configuration	11
		2.2.3	ECU Setting	12
3.	Data	Moni	tor	17
	3.1	Remo	ote Monitor	17
		3.1.1	Home	17
		3.1.2	Module	19
		3.1.3	Data	20
	3.2	Local	Monitor	22
		3.2.1	ECU	22
		3.2.2	Inverter	23
4.	Acco	ount m	anagement	24
	4.1	Forgo	ot Password	24
	4.2	Acco	unt Information Edit	25
	4.3	Acco	unt Security	26
		4.3.1	Reset Password	26
		4.3.2	Account Cancellation	27
	4.4	Devic	e Information Edit	28
		4.4.1	ECU Information Edit	28
		4.4.2	Inverter Information Edit	29
		4.4.3	Installer Information	30
5.	Арр	Settin	g	31
	5.1	Langu	Jage	31
	5.2	Night	Mode	32

Introduction

EMA APP is designed for APsystems microinverters system owners and DIY users. It allows users to track real-time performance of the photovoltaic system, see the system output by day, month, year, calculate energy savings and environmental benefits. It also allows system commission and configuration.

1.APP Download

- > Method 1: Search "EMA APP" in "APP Store" or "Google Play"
- > Method 2: Scan the QR code to download.





- iOS 13.1 and onwards
- Android 7.0 and onwards

2.1 Register Account

If you don't have an EMA account yet, you can register through the EMA APP. The following introduction takes the example of registering an account first and then configuring the ECU. You can also configure the ECU first and then register an account.

- > Register is divided into the following steps:
 - Step1: Click "New Account" to enter the registration navigation page.
 - Step2: Account Information (Required)
 - Step3: Device Information (Required)



2.1.1 Account Information

On this page, please fill in the information related to your account. Required fields are marked with "*".

- > To complete account information:
 - Click "Account Info",
 - Enter the necessary information according to the prompts on the page and tick the relevant agreements,
 - Click "OK" to complete.
- > Click *"Device"* to add devices.

	0 Kis 🛠 🕾 🗃 16% 🗈	10:02	🖞 K 📚 🖬 16% 🗈	09:58	
< 4	Account Info	< Acc	count Info	<	New Account
We need you to provide y create an account for you	our basic account information in order to u.	City * JiaXing	0	S Account I	nfo
Account Info		Contact Email *		Login Account	
Login Account * 1-60 bit letters, digits, tein	underscores, @, spaces or dots.	Contact Phone - Optional	, i i i i i i i i i i i i i i i i i i i	Address : Othe	rs, United States
Password * Length 6-32 bits, must	t contain numbers and letters 😽 🤡			Oevice Int	formation
Name * test	0	Installer Information Company Code - Optional Please contact your install	er to obtain their company code. The		Device
Country / Region * United States	~	installe can log in to EMA Manager or the web-based EMA query the company code in the settings page.			Complete Registration
State / Province * Others	~				
City * JiaXing	0	Others	through and agree with the		
Contact Email *		Terms of Service a	nd Privacy Policy		
(and particular second	cn 🥝	I declare that I am	an adult above 18 years old.		
Contact Phone - Optio	nal	Allow APsystems t	o Send New Productions,		
		Services, Meetings	and Marketing News		
Installer Information					
Company Code - Optic Please contact your in installer can log in to I query the company co	onal staller to obtain their company code. The EMA Manager or the web-based EMA and do in the settings page.		ок		
-					

Note

- You can enter the **company code** to make the link to your installer/retailer. This field is optional.
- Installer/retailer can login EMA Manager or EMA web portal and get the company code in the "Setting" page.

2.1.2 Device Information: ECU Information

- > To complete ECU information:
 - Click "Device" to add devices.
 - Click *"Inverter"* in the [Device Type] page.
 - ECU Information(Required)
 - Inverter Information(Required)
 - Module Information (Required)

13:15 ⁰⁰⁰ K S ⊿ 75% ∎ < New Account	13:15 000 ¥ ⊛ ∡ 75% ∎ < Device Type	13:15 000 at 75% ∎ < Add Device
Account Info Login Account : te Address : Others, United States	Please select the type of device to install Provide you with precise services	● ECU Information
Device Information Ovice	APpytems invertes(s, meters and other devices communicate with each other devices communicate with each other devices communicate with each other devices general control (hu), thus achieving efficient monitoring and management of the operating status of pv stations.	Inverter Information Ormanian Inverter
Complete Registration	ELS/ELT APsystems or grids, and can be frexby configured to meet different energy needs.	Panel Information >
	AHS/AHT Energy Storage APsystems AHS/AHT storage devices can generate and use electricity without the support of the public power grid, easily coping with various complex power usage scenarios and ensuring worry-free power usage.	

- > To complete ECU information:
 - Click "ECU" ,
 - Enter the corresponding ECU information according to the page prompts (the ECU entry method is divided into "scan code entry" and "manual entry"),
 - Click "OK" to complete.

13:17		197 🗙 🖘 📶 74% 🖻	13:17		0.64 🔌 🛞 🔐 75% 💼
	Add ECU			Scan	
CU Info へ llect the ECU of e top of ECU, as v	PV system. ECU ID is a 12-dig vell as on the front flap of the	git number located on e shipping box.			
ECU ID * 12-digit number the shipping box 216	located on the top of ECU, or c.	r on the front flap of	0		0
	OK		ECU Ar 216	U – R – MX ticle No. 209031	Entrada de CC: 5VUC cA maa Enclosure rating: IP20 Consum rue energia: 1.7W Rango de operación de temperatura ambiente -20°C to +65°C
			Ce Checke	078682130 rtificate	FCC ID 2AFGR EGUR
			Date Press turn Ma	AP button to on hot – spot	Aine. www.APystems.com

2.1.3 Device Information: Inverter Information

- > To complete Inverter information:
 - Click "Inverter" to enter,
 - Enter the corresponding inverter information according to the page prompts (the entry method of the inverter is divided into "scan code entry", "manual entry" and "import from ECU"),
 - Click "OK" to complete.



- > To complete module information:
 - Click "Panel information" to enter,
 - Enter the corresponding information according to the page prompts,
 - Click "OK" to complete.

13:20 ⁰⁷¹ K ® ⊿ 74% ∎ < Add Device	13:21 13:21 13:21 13:21 14% 🛎 <	13:21 000 at 73% ∎ < Add Device
ECU Information	Panel information Collect information about the modules of the pv system to better display the system power conversion information	ECU Information
ECU : 216 X	Module Maximum Power(Pmax) (W) * 200-1000	ECU:21 X ⊕ ECU
Inverter Information	System Size (kW) * System Size(kW) = Pmax(W) * Number of Modules / 1000	Inverter Information
ECU : 216 Total : 2 70 1 ×	Module Type * de, ©	ECU : 21 Total : 2
70° 2 X		70 1 2 X
Inverter Panel information	OK	Inverter Panel information
ОК		ок

> Click "Complete Registration" to complete.

	^{0.66} ≰ 🥱 all 73% 🖬	13:21	
< New Accou	nt	1	New Account
Occount Info		O Acc	ount Info
Login Account : te			count : tes
Address : Others United States		Addroso	Official United Chates
Address . Others, Onited States		Address	
ECU Information		•	Notice
ECU : 21	×	EC	×
			Congratulations! You have your own account!
(+) ECU			If you have not initialized the ECU, please
		i	nitialize the ECU first. If you have initialized
Inverter Information			the ECU, log in directly.
ECU : 21(Total : 2	EC	Initialize ECU
70 1	×	70	Login
70* 2	×	70	X
① Inverter			
Panel information	weine >	Panel inf	formation
Add Other Device	2		
Complete Registrat	ion		
complete registrat			
	_		

2.2 ECU Initialization

After the account registration is completed, you can initialize the ECU.

Note

When configuring the ECU, you need to switch the mobile phone network to the ECU hotspot. The default password for the ECU hotspot is 888888888.

2.2.1 Link Inverters

- > Click "ECU Initialization" to enter,
- Correct the inverter number, click the "Bind" button, and send the inverter UID to the ECU. The ECU will automatically complete the network binding with the inverter. This process takes some time.

If you skip account registration and proceed directly to ECU initialization, you need to enter the inverter information.



2.2.2 Network Configuration

- Select the Internet Wi-Fi that can be connected in the ECU work area and enter the Wi-Fi password or choose wired network configuration,
- > Click "OK" to complete the network configuration.

	13:16	🗢 👀	15:	22	🗢 🔳
	Network Configuration		<	Network Configu	ration
s	tep 2: Network Configuration		Step	o 2: Network Configurati	on
In	itialize ECU 2162		Initia	alize ECU 2162	
	 Using wired network to configure network 	the		Using wired network to c network	onfigure the
	Please insert the network cable for ECU, and the ECU will automatical	the	•	Using wireless network o	configuration
	obtain the MAC address and IP address	,		APsystems-EMA	$\Rightarrow \otimes$
	Using wireless network configurat	ion		Wi-Fi Password	Ø
	Setting			Setting	
	Skip				
				БКІР	
					_

2.2.3 ECU Setting

You can view and set various configuration items of the ECU.

16:55		🗢 👧				
	Setting					
 215 Version:ECU-C-Z_C1.2.11 						
Link Inverte	ers	>				
Config Net	work	>				
Reset AP F	assword	>				
Config Met	ter	>				
New Accou	unt	>				
Language		English >				
Exit						
CU	L Inverter	ැටූ Setting				

2.2.3.1 Config Meter

Different models of ECU have different meter setting functions.

- > Select the system type and turn on the meter function,
- According to the actual configuration requirements, select the appropriate working mode for configuration to ensure safe system operation.



ECU-C	
16:22	🗟 55
< c	config Meter
Meter Function	
System Type	Single-phase system \geq
Please select the actual configurat will be adapted a type.	e system type based on the ion on-site. The work mode according to the system
Work Mode	none >

ECU-R



2.2.3.1.1 Export Limitation

After the export limitation function is turned on, if the power limit value is not filled in, it defaults to 0. That is, when the ECU-C detects that the generated energy from the photovoltaic system is uploaded to the grid (reverse power), it immediately sends an instruction to reduce the output power of the inverter, eliminating the problem. Reverse power, when the forward power flowing from the grid to the load increases, the inverter output power increases again. This dynamic adjustment can not only realize the export limitation function, but also maximize the use of solar energy.

Limit the power on the grid: limit the reverse power value, for example, input 3, which means the ECU limits the upper limit of the reverse power uploaded to the grid through the control system power generation to 3KW. The default value is 0, which is the 0-export function.

Three-phase configuration: If the three-phase system composed of APsystems single-phase micro-inverters needs to realize the independent anti-backflow or limit the power on the Internet function of each phase, the micro-inverter connected to each phase needs to be registered in the corresponding frame.

	16:17	🗢 56
4		Work Mode
	Work Mode	Export Limitation >
	Power Limit	0 kW
	The power expor to the power limi	rt to the grid cannot exceed it. OK
	_	

2.2.3.1.2 Redundant Energy Control

The function of the redundant energy control is to control the opening of the external AC contactor by closing the internal relay of ECU-C when the electric energy uploaded to the power grid reaches a certain power value, thereby supplying power to external electrical equipment (such as water heaters), and trying to maximize the power uploaded to the grid by local load consumption.

The threshold indicates that when the power uploaded to the power grid reaches this value, the relay is closed and controls the external contactor to conduct. For example, if the power of the water heater is 2KW, you can set the start-up threshold to 2KW. In this way, when the power uploaded to the grid exceeds 2KW, the water heater will be powered through relay control without consuming power from the grid.





This feature is currently only available for single-phase systems.

2.2.3.1.3 Three-phase Balance

When a three-phase system is composed of a single-phase microinverter from APsystems, the three-phase balance function can be turned on to ensure that the three-phase current difference does not exceed 16A.

To realize the three-phase balance function, you can connect the external CT to detect the current, and the response speed is faster; you can also collect the micro-inverter data detection on each phase through the ECU. There is no need to connect an external CT, but the response speed will be slow, and generally the maximum time required is 5 minutes. It is necessary to register separately according to the micro-inverter serial number of each phase in the three-phase configuration.

	🗢 🐻				
< Work Mode					
Work Mode	Three Phase > Balance >				
Ensure the current b is in a stable range. I comprised of single- need to configure the phrases.	etween each two phrase f a tri-phase system phase inverters, you e inverters into three				
Phase A					
🕀 Con	fig Inverter				
Phase B					
🕀 Con	fig Inverter				
Phase C					
Config Inverter					
	ОК				

3.1 Remote Monitor

Note

Remote monitoring requires logging in to an EMA account.

3.1.1 Home

"Home" displays the real-time operating status and system benefits;



Note

The home of a system with a smart electricity meter installed is not the same as the home of a simple PV system.

The smart electricity meter user home page contains four parts: system status, power flow diagram, energy analysis and environmental benefits.

Power flow diagram

Energy Diagram



3.1.2 Module

"Module" displays the system module level operating status;

18:17				穼 79)
		Module		
166	167	168	168	168
ECU	:2160	202	23-09-11 1	1:25
1 Home	Module	3	Data	Settings

3.1.3 Data

"Data" displays the current operating status and historical power generation of the system.



Note

Energy Metering

The data of a system with a smart electricity meter installed, the data page will display two types of data: "Energy Metering" and "ECU". By default, the "Energy Metering" is displayed first.

Energy Metering displays the system's power generation and consumption analysis data.

::!! 🗢 39% ... Energy Metering Day Daily Monthly Yearly 2024-09-25 ? Power(W) 8k 6k 4k 2k 0 -2k -4k -6k 00:02 02:07 04:13 06:18 08:23 10:29 12:34 14:40 Produced Imported/Exported Power Consumed ECU: 215 39.47 _{kWh} 26.24 kWh Produced Consumed 25.12 _{kWh} 11.89 _{kWh} Exported Imported 203 V Data Home Module Settings



ECU

3.2 Local Monitor

Note

You need to switch the mobile phone network to the ECU hotspot and click "Local Access" on the login page. The default password for the ECU hotspot is 88888888.

3.2.1 ECU

"ECU" displays the real-time operating status of the system and the system's environmental benefits;



3.2.2 Inverter

"Inverter" displays the device level power generation data, the progress of the network between the device and the ECU and the alarm information of the device.

15:37		奈 79 1	15:3			🗢 79 1			÷ 7
			<						
Power	Network	Alarm	Po	wer	Network	Alarm	Power	Network	Alarm
ECU: 2162			ECU	J: 2162			ECU: 2162		
UID: 7030			-	UIE	D Network	Signal		UID	Alarm
channel 1:		1W	1	703	ОК	al	1 902	0	FF GRID
channel 2:		388W	2	902	ОК	al	2 902	1-chanı	nel no pane
UID: 902			3	902	ОК	al	3 902	2-chan	nel no pan
chappel 1:		864W	4	901	ОК	al	4 902	3-chan	nel no pan
channel 2:		921W	5	901	ОК	al	5 902	4-chan	nel no pan
channel 3:		921W					6 902	Out	tout fault
channel 4:		880W					0 002	U.	partaan
UID: 902									
channel 1:		900W							
channel 2:		923W							
channel 3:		923W							
channel 4:		881W							
$\hat{\Box}$	<u> ~</u>	(¢)	4	\sim	<i>م</i> یرا		$\hat{\Omega}$	12	
ECU	Inverter	Setting	E	CU	Inverter	Setting	ECU	Inverter	Setting

4.1 Forgot Password

If you forget your EMA account login password, you can reset your account password through the password retrieval process.

- Click "Forgot Password",
- Enter your account name and email, click to get the verification code, then consult your email to retrieve the verification code (verification code is valid for 5 minutes), and return to the APP to verify the information,
- > Enter the new password and click "Finish" to complete.



4.2 Account Information Edit

- > Log in to your account and enter "Account Details" on the "Settings" page,
- Enter the correct information in the input box where the information needs to be modified, and click "OK" to save the modified information.

19:39	🗢 (84)	19:35	
Settings		<	Account Details
Account Details	>		
Account Security	>	Login Ad 1-60 bit	ccount * letters,digits,underscores,@,spaces
ECU	>	Name * XXXX	
Micro Inverter	>	Country	/ Region *
Installer Information	>	China's	Mainland ~
Benefits Calculator	>	Jiangxi	vovince ·
Night Mode		City * Yichun	
Language	>	Address XXXXX	- Optional
About	• >	Contact	Email *
Logout Current Account		Contact 137000	Phone - Optional 00001
	~~•	Module 200-100	Maximum Power(Pmax) (W) * 00
Home Module Data	ک ی Settings	330	
		System	Size (KVV)

4.3 Account Security

4.3.1 Reset Password

- > Log in to your account and enter "Account Security" on the "Settings" page,
- Click "Reset Password", enter the new password, and click "Submit" to complete the password reset,

19:39		···· 🗢 (84)
<	Account Security	
Reset Passw	vord	>
Account Car	ncellation	\rangle
☆ Home	Module	کې Settings

4.3.2 Account Cancellation

- > Log in to your account and enter "Account Security" on the "Settings" page,
- Click "Account Cancellation", enter the reason for cancellation, and click "Submit" to send the account cancellation application,

19:39			穼 84)		19:40			ᅙ (84)
	Account	Security				Account Ca	ancellation	
Reset Pass	word		>		Submit an a permanent	application, de ly cancel the a	elete all data account.	, and
Account Ca	ancellation		>		Reason for	cancellation	*	
						Sub	mit	
1 Home	Module	Data	رې Settings		1 Home	Module	Data	تې Settings
1 N	lote							
MA will I	process th	e submit	ted applic	ation	within 48	8 hours.		

4.4 Device Information Edit

4.4.1 ECU Information Edit

- > Log in to your account and enter "ECU" on the "Settings" page,
- Click "Replace", enter the new ECU ID in the input box, and click "OK" to update the ECU information,

19:40		🗢 🐯	19:40	🗢 83)
	ECU		< ECU	
	216 Asia/Shanghai		The production data in ECU leve processed once replaced ECU.	will be
	251 Asia/Shanghai		Current ECU 2165	
			New ECU 12-digit number located on the t on the front flap of the shipping	op of ECU, or box.
		_		_

4.4.2 Inverter Information Edit

- Log in to your account and enter "Inverter" on the "Settings" page, \triangleright
- Click "Replace", select the inverter replacement method, edit the new device ⊳ information according to the page prompts, and click "OK" to update the inverter information,

Method 1: Replace by device Replacing DC equipment, DC level data will not Replacing DC equipment, DC level data will not be processed for continuation be processed for continuation Current ECU Current ECU 21658 2165 Current Inverter Туре Current Inverter Туре 4060 YC600 4060 YC600 Replace method Replace method Device Channel New inverter New inverter 12-digit number located on the top of 12-digit number located on the top of inverter, or on the front flap of the inverter, or on the front flap of the shipping box. shipping box. Please enter the new inverter ID **Current Channel** New Channel 2 Please sele...

Method 2: Replace by channel

29

4.4.3 Installer Information

The user can associate the registered user account with the installer's technical support account here. After the account is associated, the user can view the installer's information on this page.

- > Log in to your account and enter "Installer Information" on the "Settings" page,
- If the installer's company code is not associated when registering the account, you can click the "Associate" button and enter the installer's company code to associate the account; if the installer's company code has been associated, the installer's information will be displayed on the page,



You can enter the **company code** to make the link to your installer/retailer. This field is optional.

Installer/retailer can login EMA Manager or EMA web portal, and get the company code in the "Setting" page.

5.App Setting

5.1 Language

You can switch the language on the "Login" page and "Setting" page.

15:06 🗢 😰		🗢 📴	15:22			17:21			
APsystems English		English	<	Setting			Setti	ngs	
				1.1	Account D	etails		>	
				-		Account S	ecurity		>
	EMA		2162 Version:ECU_R_PRO_2.1.12			Night Mod	е		
	(For End User)		Link Inverte	rs	>	Benefits C	alculator		>
		-	Config Netv	work	>	Language			>
	🔒 Password	4	Reset AP Pa	assword	>	About			• >
	Forgot Password								
	Login	Login			English >	Logout Current Account			
	New Account			Exit					
	Demo List Local Access								
	All Rights Reserved	3	ECU	Inverter	63 Setting	1 Home	Module	Data	وَنَ Settings

5.App Setting

5.2 Night Mode

The App interface can be switched to night mode.



13:21			穼 29					
Settings								
Account Det	ails		>					
Account Sec	curity		>					
Night Mode								
Benefits Cal	culator		>					
Language			>					
About			• >					
Lc	ogout Curr	rent Account						
☆ Home	DD Module	∠ Data	رکی Settings					