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ShineMaster User Manual

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1 About the user manual

1.1 Introduction

Dear users, thank you very much for using the ShineMaster data logger (hereinafter referred to as ShineMaster) developed and produced by Shenzhen Growatt New Energy Co., Ltd. (hereinafter referred to as Growatt). We sincerely hope that this product will meet your needs and expect you give more opinions on the performance and function of the product. The purpose of this manual is to provide users with detailed product information and instructions for installation, operation, and maintenance.

1.2 Copyright statement

Copyright© 2019 Growatt New Energy Technology CO.,LTD. All Rights Reserved. No part of this document may be reproduced or transmitted in any form or by any means without prior written consent of Growatt New Energy Technology CO., LTD. The version of this manual is V2.0. Growatt owns the final interpretation right of this user manual. The information in this document is subject to change without notice. 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.

1.3 Authorized personnel

This manual is for professional personnel who install, commission, and maintain the ShineMaster for Growatt inverters. This manual does not contain electrical connections for inverters, combiner boxes, weather stations, smart meters, and anti-reflux devices, as well as related precautions.

1.4 Manual usage

Please read through this manual before using ShineMaster. At the same time, please keep this manual in a safe place so that operators and maintenance personnel can easily find it. The contents of the manual will be continuously updated and corrected. It is inevitable that there will be slight inaccuracies or errors in the actual contents. Users should follow the manual packed with Shinemaster. The latest user manual can be downloaded from www.ginverter.com and can also be obtained through Growatt's sales or service teams.

2 Product description

2.1 Device Overview

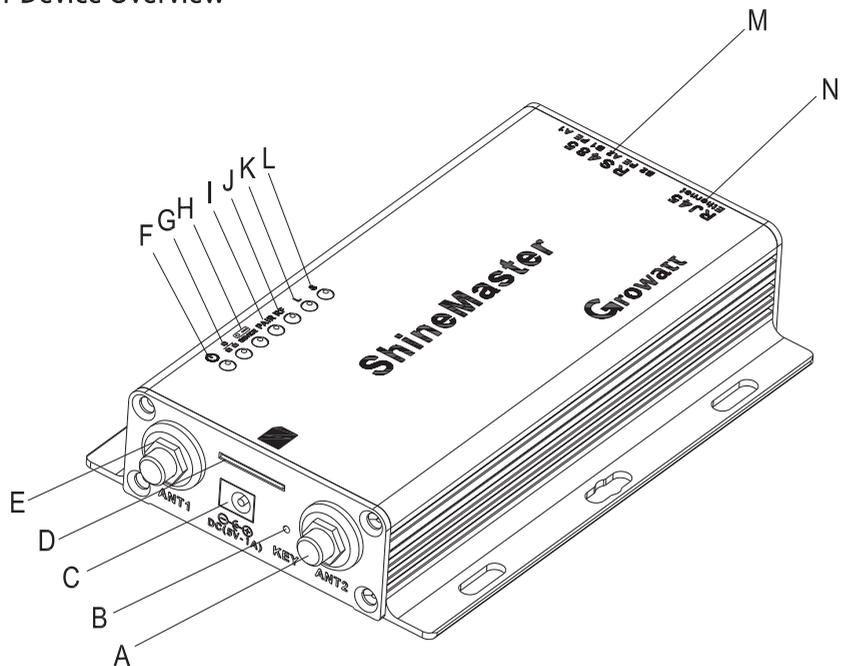


Fig.2-1

2.1.1 Port

The interface of ShineMaster, as shown in figure 2-1 above.

The functional description of each interface is shown in table 2-1.

Item	Name	Function
A	ANT2	Antenna, used to receive wireless signals
B	KEY	Reset button
C	POWER	Power supply port
D	SIM	SIM card slot
E	ANT1	Rf antenna interface
N	LAN	RJ45 port: Connect Shine ShineMaster to the local network area of Shine Server through RJ45 cable
M	RS-485	Twin-channel RS485 port

Table 2-1

2.1.2 LED description

ShineMaster has seven LED indicators. The status of the ShineMaster can be displayed by the LED indicator. As shown in figure 2-1 and table 2-2 above.

Item	Name	Function
F	Power LED	Power indicator light, steady light means power supply is normal
G	Network LED	Network light: 1: No light means fail to obtain IP address; 2: Flashing light means connecting to the server; 3: Steady light means connected to the server
H	Device LED	The number of the LED continuously flashing means the number of device connected to the ShineMaster
I	Configuration LED	Flashing when configuration , if successful , the LED will be off (temporarily unavailable)
J	RF	RF signal indicator (temporarily unavailable)
K	4G	4G signal indicator
L	Status light	The LED light is flashing when there is a error

table 2-2

2.2 Unpacking

2.2.1 Packing List

Check ShineMaster and accessories are intact and complete as below figure 2-2:
If any damage is found or any component is missing, contact your supplier.

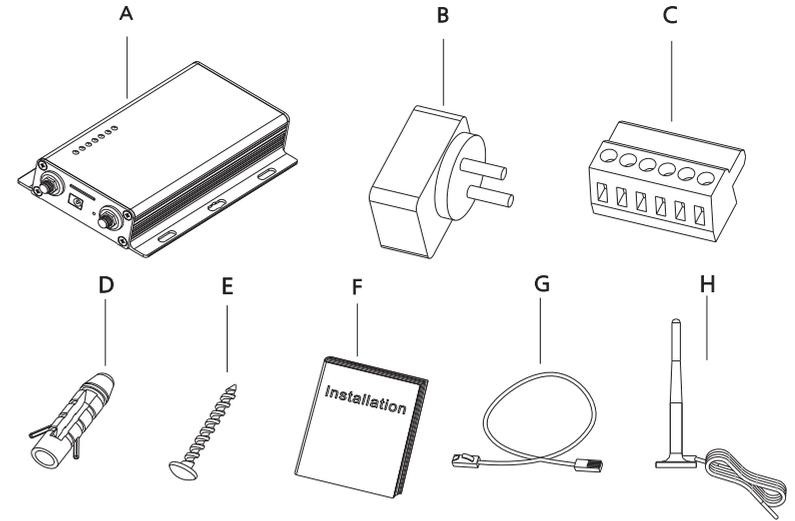


Fig 2-2

Item	Name	Amount
A	ShineMaster	1 pcs
B	5V power adapter	1 pcs
C	Terminal RS485	1 pcs
D	Wall plastic column	4 pcs
E	M3.5*20 screw	4 pcs
F	ShineMaster user manual	1 pcs
G	Ethernet cable	1 pcs
H	4G Antenna	1pcs(The 4g version)

Table 2-4

Note: 1: the above accessories ShineMaster 4 g version to configuration in 4 g antenna
2: 4G sim card needs purchased from Local Telecommunication service provider .

2.2.2 Serial Number and Check Code

The ShineMaster Serial number (S/N) and check code (CC) are stuck on the ShineMaster's package box, which have mixed up with letters and numbers. the serial number and check code for each device are unique, to identify each ShineMaster. When you want to upload the data of ShineMaster to the server, you will need both serial number and 'check code' to register on the server

2.3 ShineMaster Network Introduction

ShineMaster supports network communication, which can be communicated via wired WLAN, 4G and cloud server. Upload the monitored data to the server of Growatt, and then access the server's domain name. with the industrial common communication mode RS485 and wireless RF communication, ShineMaster can also supports wired and wireless communication to monitor and control devices and perform online upgrades on follower devices. By accessing ShineMaster's internal IP address, you can enter the built-in page for parameter setting, device adding and inspections. (please refer to section 4.4 below).

ShineMaster monitors the photovoltaic devices through RS485 and RF(temporarily not supported). The diagram below shows the schematic diagram of network monitoring through wired RS485.

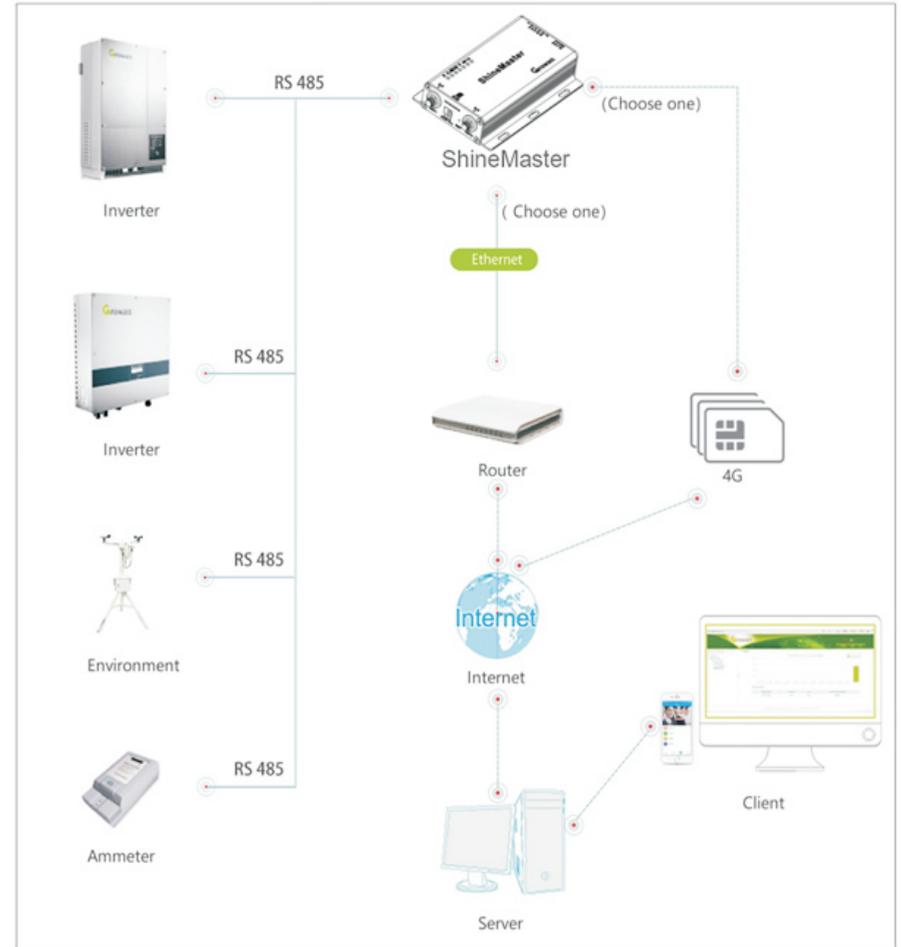


Fig 2-5

3 Installation and Connection

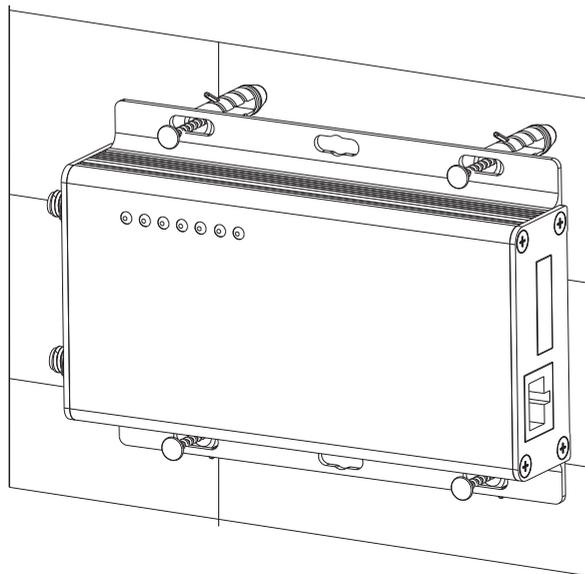
3.1 ShineMaster installation environment requirements

The installation environment requirements of ShineMaster and communication with other devices:

- (1) Indoor installation, temperature - 40 ~ 60°C , avoid moisture and direct sunlight.
- (2) Cable RS485 in maximum 500m.
- (3) The standard version :The length of communication cable to the switch or router is not more than 100m.
- (4) The 4G version: Using 4G communication mode, must connect to 4G antenna, insert the 4G sim card.

3.2 ShineMaster installation

3.2.1 Installation Procedure



The installation steps are as follows:

- (1) Install ShineMaster on a vertical surface or horizontal surface.
- (2) Connect cables between RS485 port and RS485 port on ShineMaster (please refer to 3.3.1 below for details)
- (3) Communication mode options
 - The standard version: Connect the network cable
 - The 4G version: Connect 4G antenna, insert the 4G sim card.
- (4) Connect the Power supply

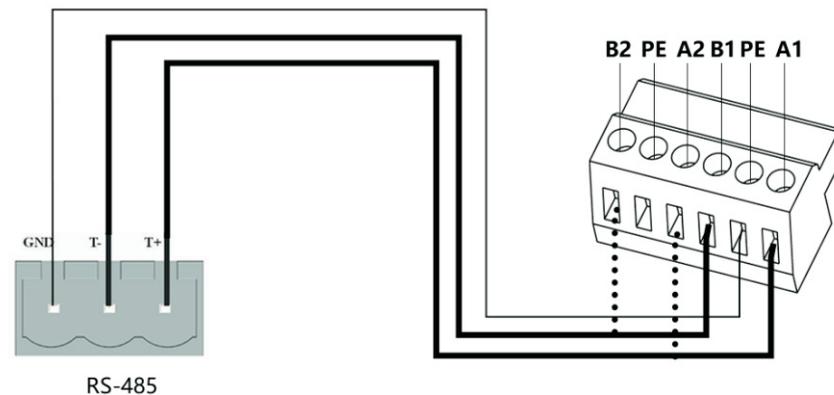
3.3 Connect to the photovoltaic device

ShineMaster can communicate with the inverter, weather station, smart meter, combiner box and other photovoltaic devices to collect the data.

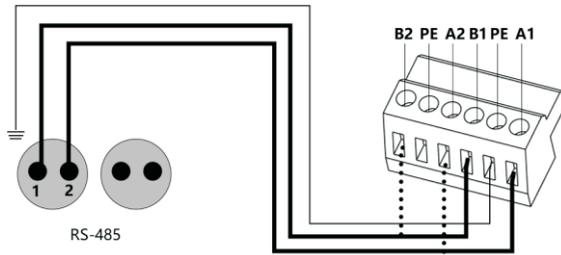
3.3.1 RS485 cable connection

1. ShineMaster (leader) communicates with follower devices via RS485 wired connection. T+ on the RS485 port of the device corresponds to A1 or A2 on the ShineMaster 485 port, T- and ShineMaster 485 on the RS485 port of the follower device, corresponding to B1 or B2. The following is a schematic diagram of the connection between the ShineMaster and the inverter:

Note: the RS485 shielded wire must be ground (PE) for long distance communication, so as not to affect the communication stability.



2. Note that the inverter also has a port like the one below.



3. The inverters are connected to the ShineMaster via RS485 parallel connection. Using the RS485 wired communication connection, the ShineMaster can monitor up to 64 inverters stably.

4. Other 485 communication devices such as smart meters, junction box, environmental monitor, etc., connection method and the inverter is the same.

Note: 1) Communication RS485 shielded wire must be ground (PE), so as not to affect the stability of communication.

2) ShineMaster double 485 ports are connected to the matched resistance with 120 ohms, and when one or more inverters with ShineMaster 485 communication, must have one inverter connect matched resistance with 120 ohms. Avoid affecting communication. (If multiple inverters connect one 485 port can only have one inverter connect the matched resistance.)

3) The weather station, combiner and smart meter manufacturers must be designated by Growatt.

4 ShineMaster internal page parameter setting

4.1 Access methods

4.1.1 The first method:

1. Connect PC and ShineMaster to the same router, make them in the same LAN.

2. Check ShineMaster IP address. Take an example with TP_LINK router:

1) Get in the router management page.

2) Click on the "DHCP server -> client list".

3) Find the same as the serial number of the collector SN the client name, This IP is the IP address of the router assigned to ShineMaster.

Then if: ShineMaster serial number of SN is: AEA3745001, the query results as shown in the figure below:

2	AEA3745001	00-47-8F-60-BF-34	192.168.100.101	01:30:32
---	------------	-------------------	-----------------	----------

Note: the router must open the DHCP function.

3. In the browser input ShineMaster IP address into ShineMaster internal web page.

4.1.2 The second method:

1. Connect PC with ShineMaster directly with cable.

2. Amend the computer IP to 192.168.0.XXX (XXX range is 2 ~ 253). Computer IP Settings as shown in the figure below:

192	.168	.0	.5
255	.255	.255	.0
192	.168	.0	.1

Note: Do not need to set the DNS server address

3. ShineMaster internal default access IP for: 192.168.0.254. On the web page input 192.168.0.254 can access the built-in web page.

4.2 The internal page

Check the cable between devices, then input the Internet explorer browser with ShineMaster IP address to log into ShineMaster internal web page

Note: ShineMaster and computer must be in the same network segment, otherwise cannot access the internal web page.

1: If using the methods in 4.1 a, the input in the browser 192.168.100.101; If using method 2, the input 192.168.0.254 in the browser. As the figure below:

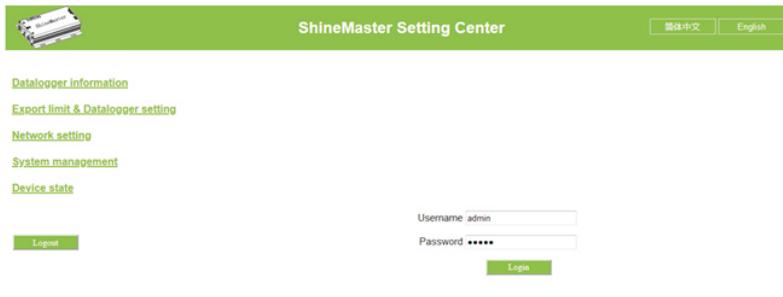


Fig 4-1

2. Enter the user name and password, the default login user name: admin password: admin, fill in and click on login to enter the Growatt ShineMaster system page.

4.3 ShineMaster Status

Click the ShineMaster datalogger Status to view information such as the "System Status Information", "Serial Number", "Server Address", "Number of Connected Devices", etc. of the ShineMaster



Fig 4-2

4.4 ShineMaster Datalogger management

Devices should be added in 'ShineMaster datalogger setting' interface in internal page prior to monitoring

4.4.1 Add device

(1) Before ShineMaster monitors photovoltaic equipment, it is necessary to enter the "ShineMaster Data Collector Settings" page of the internal page to add devices.



Fig 4-3

(2) In the second pull-down list, select the type of monitored device

Device types parameter information:

INVERTER: GROWATT Inverter: PCS、HPS、MAX、MIN、MTLP_US、SPC3000;

SDM120: SDM Single phase meter;

SDM630: SDM Three phase meter;

WeaterStation: WeaterStation;

CHNT_DDSU: CHNT Single phase meter;

CHNT_DTSU: CHNT Three phase meter.

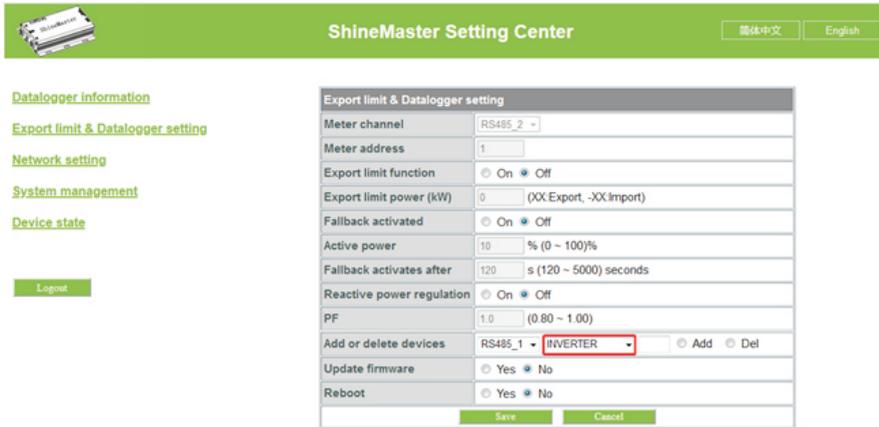


Fig 4-4

(3) In the third drop-down list, fill in the communication address of monitored device



Fig 4-5

(4) Select "Add" and click Save.

(5) After successfully saving, enter the "Device Status" page to check whether device is successfully added.



Fig 4-6

4.4.2 Delete device

(1) Select the monitoring method for monitoring PV devices in the first drop-down list of "Add or Remove Devices".

(2) In the second pull-down list, select the type of PV plant being monitored.

(3) Fill in the PV device communication address in the third pull-down list.

(4) Select "Del" and click Save to finish removing of the device.

(5) After successfully saving, enter the "Device Status" page to check whether the device is successfully deleted.

As shown in the picture:



Fig 4-7

4.4.3 Multiple add/delete devices

If the address of a kind of equipment continuously, can one-time added or delete. As shown below:

(1) Add 10 inverter

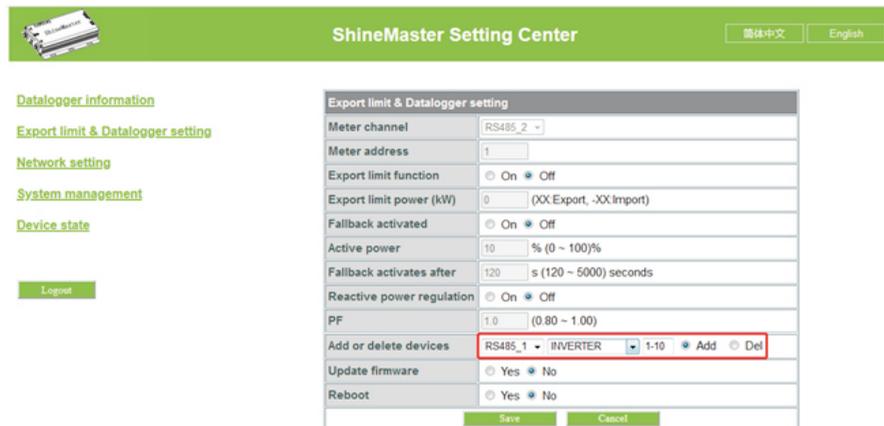


Fig 4-8

(2) Enter the page of "Device status" confirm whether equipment added successfully.



Fig 4-9

(2) Both add and remove devices, select "DEL".

Add and delete device:

1. When you need delete a device, all the options should be the same with the momemet you add this device like: 485 channel, device type, address, if you are not sure about this you can check the device status first.
2. When one address is occupied, you cannot just paste the new device, you have to delete the old device and use this address.

4.5 Baud Rate Setting

The Default two channels' Baud Rate are both 9600, you can choose the Baud Rate for different scenarios.

- (1) Choose the Baud rate at the "Baud rate setting" Bar.
- (2) Choose the corresponding chanel RS485_1 or RS485_2. Set the Baud rate to 9600 as RS485_1



Fig 4-10

4.6 Server Settings

4.6.1 ShineMaster networking Settings

1: The standard version: LAN communication

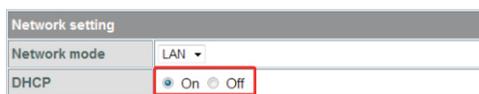
(1) In the configuration page click " Network setting " column, select the net way for LAN, can be saved.



Network setting	
Network mode	LAN

Fig 4-11

(2) ShineMaster's Default setting of the DHCP function is "ON" it will automatically get IP address.ShineMaster



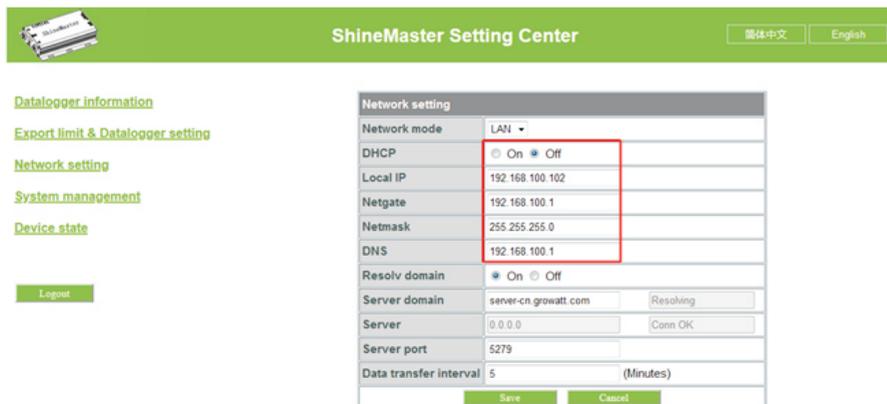
Network setting	
Network mode	LAN
DHCP	<input checked="" type="radio"/> On <input type="radio"/> Off

Fig 4-12

(3) If you need a fixed IP address you need following steps

(3.1) Turn off the "Dynamic IP" to shut down the DHCP function

(3.2) Put in the fixed IP, network management, net mask and DNS then click "Save"



ShineMaster Setting Center

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[Network setting](#)
[System management](#)
[Device state](#)

[Logout](#)

Network setting	
Network mode	LAN
DHCP	<input type="radio"/> On <input checked="" type="radio"/> Off
Local IP	192.168.100.102
Netgate	192.168.100.1
Netmask	255.255.255.0
DNS	192.168.100.1
Resolv domain	<input checked="" type="radio"/> On <input type="radio"/> Off
Server domain	server-cn.growatt.com Resolving
Server	0.0.0.0 Conn OK
Server port	5279
Data transfer interval	5 (Minutes)
Save Cancel	

Fig 4-13

2: The 4 g version:

In the configuration page click " Network setting " column, select the net way for 4G, can be saved.



Network setting	
Network mode	4G

Fig 4-14

Note: ShineMaster 4 g version can also choose to LAN way to communicate with the server.

4.6.2 Server Address Setting

The Server Address will choose two methods, one is IP and one is domain name, you can only use one at a time.

(1) when you are using the domain name to connect server you can choose on at "Domain Name Analysis Function" set the server as server.growatt.com



ShineMaster Setting Center

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Network setting	
Network mode	LAN
DHCP	<input checked="" type="radio"/> On <input type="radio"/> Off
Local IP	192.168.100.103
Netgate	192.168.100.1
Netmask	255.255.255.0
DNS	192.168.100.1
Resolv domain	<input checked="" type="radio"/> On <input type="radio"/> Off
Server domain	server.growatt.com Resolv OK
Server	47.91.67.66 Conn OK
Server port	5279
Data transfer interval	5 (Minutes)
Save Cancel	

Fig 4-15

(2) When you are using Server IP to connect the server please turn off the “domain name analysis function”, set the server as 47.91.67.66

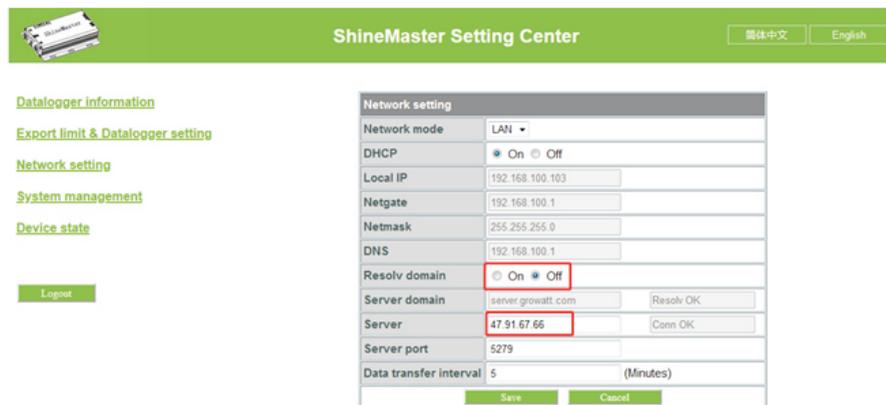


Fig 4-16

Note: Server port name and data upgrade interval are fixed cannot be changed.

Caution:

- 1) If you add a device, after saving there is no refreshment, please disconnect the data logger and restart it.
- 2) when setting related function in the configuration parameters, only follow the above method, other parameters remain unchanged.

5 ShineMaster data uploading to ShineServer

If needed to the datalogger and all monitoring devices for data display, monitoring, and set up parameters by the server, you need to first add datalogger to the server, when Shinemaster added to the server, if the subsequent need to modify some parameters of The datalogger or enable, disable a function can be done through the server.

5.1 Registration and login

(1) Enter the address of the server on the computer browser to enter the ShineServer login page. If you are logging in for the first time, register the user name first. Enter the domain name access page, as shown in Figure 5-1.

The Chinese user server domain name is: <http://server-cn.growatt.com>

The overseas user server domain name is: <http://server.growatt.com>



Figure 5-1 Shine Server login page

(2) Register the user name and input the user information according to the pop-up. After the information is completed, click "Register".

Note: "ShineMaster serial number" and "datalogger check code" can be found on the package box.

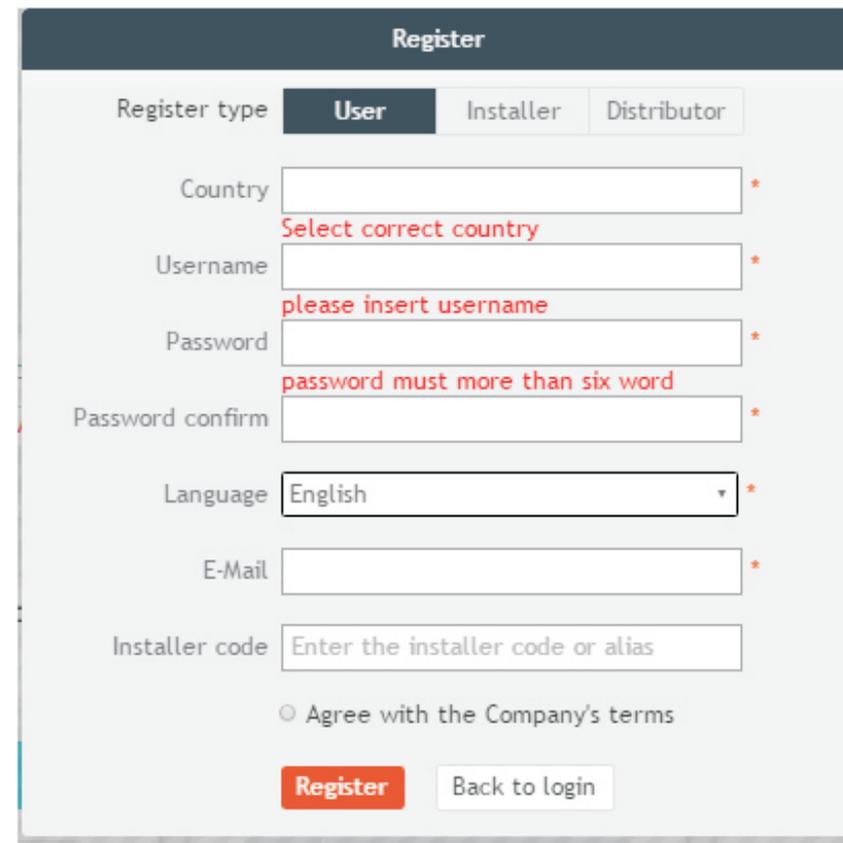


Fig 5-2

5.2 Monitoring data

(1) After the registration is completed, it will automatically skip to the ShineServer main interface. Click "plant" → "plant data", and the displayed information is the total power chart of the plant on the day. The drop-down list "Select collector" can be used to view the daily power chart of a single inverter in the power station.

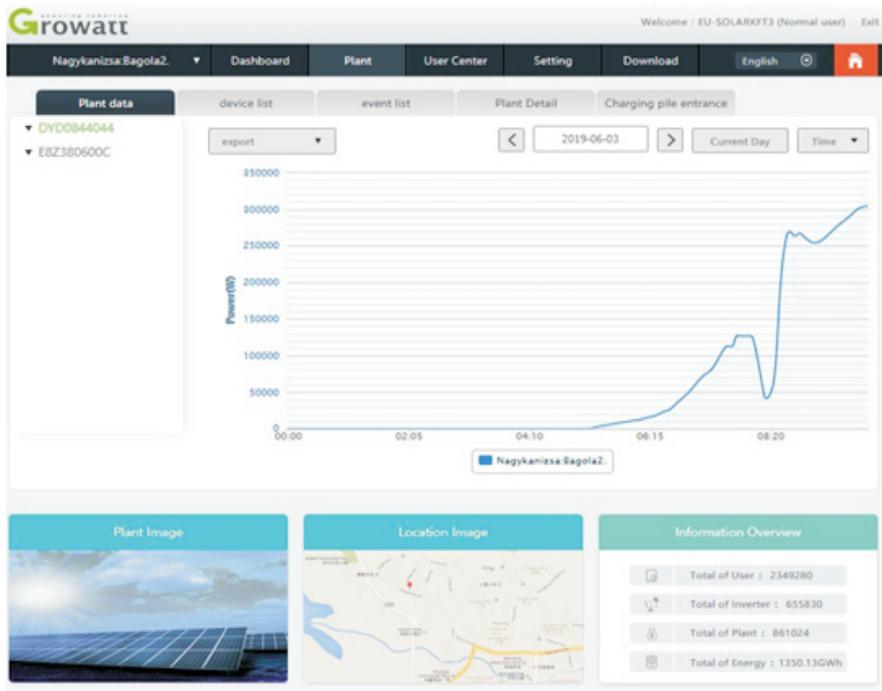


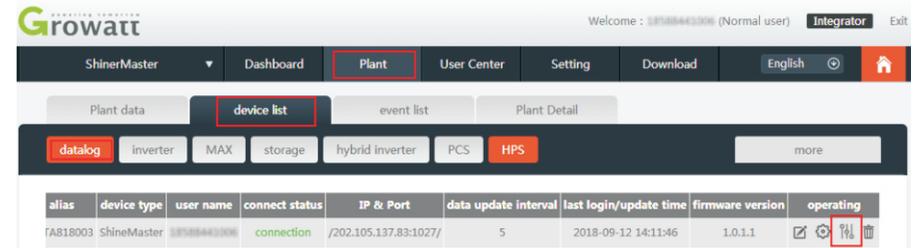
Fig 5-3

(2) Click "plant" → "Device list" to see real-time data monitored by datalogger, "Inverter", "Weather station", "Smart Meter", and "Combined Box" "MAX" .

5.3 Add or Delete Monitoring devices, change the ShineMaster Baud rate

5.3.1 Add or Delete Monitoring device

(1) In the Server page click the "Device Management" and then click "Data Logger". In this page click set the device updating icon.



(2) Add one device, add one Growatt inverter set the 485 communication address is 1.

The screenshot shows the 'Datalog setting' dialog box. The 'Device update' radio button is selected and highlighted with a red box. Below it, the 'communication method' dropdown is set to 'RS485_1', the 'Device address' dropdown is set to '1', the 'device type' dropdown is set to 'Growatt Inverter', and the 'status' dropdown is set to 'add'. Under the 'Baud rate' section, 'The first baud rate' and 'Second baud rate' are both set to '4800'. At the bottom, the 'save' button is highlighted with a red box.

(3) Delete one device, just like following figure.

Datalog setting

Device update

communication method: RS485_1

d: [empty]

Device address: 1

device type: Growatt Inverter

status: Delete

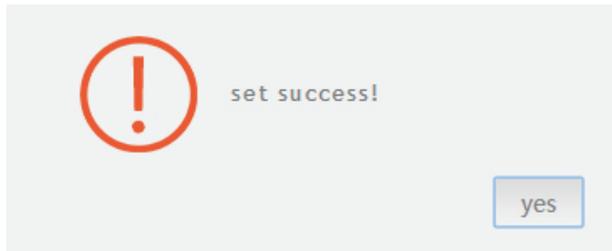
Baud rate

The first baud rate: 4800

Second baud rate: 4800

save cancel

(4) Above adding or deleting devices if success following figure will pop out.



5.3.2 Change ShineMaster Baud rate.

(1) In the Server page click "Device Management" then click "Data Logger", click the Baud rate setting icon.

Plant data device list event list Plant Detail

datalog inverter MAX storage hybrid inverter PCS HPS more

alias	device type	user name	connect status	IP & Port	data update interval	last login/update time	firmware version	operating
FA818003	ShineMaster	18588443306	connection	/202.105.137.83:1027/	5	2018-09-12 14:11:46	1.0.1.1	[gear icon]

(2) Set chosen channel's baud rate.

Datalog setting

Device update

communication method: RS485_1

d: [empty]

Device address: 1

device type: Growatt Inverter

status: Delete

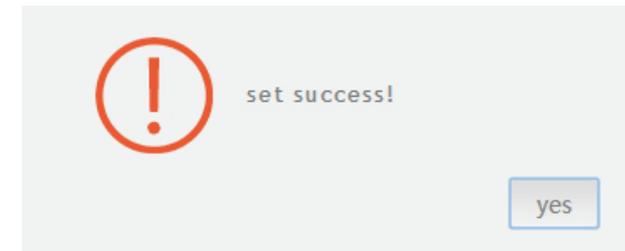
Baud rate

The first baud rate: 4800

Second baud rate: 4800

save cancel

(3) If success following figure will pop out.



Note: The second channel of Baud rate setting would be the same as the first channel.

6 Device Maintenance

6.1 Reset ShineMaster

If you press the “reset” button for five seconds, it will erase all the registered device information. All the information for the server communication part will be kept.

6.2 Common faults and troubleshooting

Fault	Cause	Suggestion
Cannot enter the ShineMaster internal page	ShineMaster can not obtain the IP	1.Enable Router DHCP Function 2.PC and the ShineMaster must be in the same network segment.
ShineMaster internal page "System Status Information" shows not connected	Unable to connect to server	1.Check whether the router network is connected to the Internet. 2.Check if the "server address" is correct The Chinese user server domain name is: http://server-cn.growatt.com The overseas user server domain name is: http://server.growatt.com
ShineMaster is online, but the monitored device is disconnected after logging in to the account	1.Monitor connection failed 2.No access to the internal page to add equipment 3.Inconsistent Photovoltaic equipment address and added equipment address 4.Wrong PV device serial number	1.Check the stability of communication cable. 2.Enter the internal page "datalogger settings" to add photovoltaic devices 3.On the "Device Status" page of the internal page, check whether the device's communication address is the same with the added device. 4.Check whether the serial number of the monitored PV equipment is 10 digits. It can only contain English letters and numbers, and there are no illegal characters.
Long time no refreshment interface after operation	Configuration page does not respond	Refresh the page or login in again.

6.3 Maintenance

1. Avoid frequent turning on and off of the power supply, handle with care;
2. ShineMaster is a product for indoor use. Do not use ShineMaster in a humid environment or in direct sunlight.

7 Technical specifications

7.1 ShineMaster specification

General specification

Length * width * height	130mm*84mm*25mm
Net Weight	180±5g
Protection grade	IP30

Operating environment

Ambient temperature	-40°C~ +60°C
Installation	Indoor

Communication

Wireline communication	RS485 maximum stability monitoring 64 inverters
Wireless communication	Not supported temporarily
RS485 communication distance	500 meters maximum (twisted shielded cable)

8 Contact us

Growatt New Energy provides customers with a full range of technical support. Users can contact the nearest Growatt new energy office or customer service point, or they can contact the company's customer service center directly.

Name: SHENZHEN GROWATT NEW ENERGY TECHNOLOGY CO.,LTD

Address: No.28 Guangming Road, Shiyan Street, Bao'an District, Shenzhen, P.R.China

Customer Service Hotline: +86 755 27471942

E-mail:service@ginverter.com

Company website: www.ginverter.com