



Shine WebBox User Manual

1	User Manual Information.....	4
1.1	Copyright Statement.....	4
1.2	About Manual.....	4
1.3	Target Group.....	4
1.4	Guideline.....	5
2	Production Description.....	6
2.1	Device Overview.....	6
2.1.1	Interface.....	7
2.1.2	Indicator LED.....	7
2.2	Unpacking and Checking.....	8
2.2.1	Packing List.....	8
2.2.2	Serial Number and Check Code.....	9
2.3	Shine WebBox Function Introduction.....	9
3	Installation and Connection.....	10
3.1	Requirements for Installation Location.....	10
3.2	Shine WebBox Installation.....	11
3.2.1	Wall-mounted Installation.....	11
3.2.2	Horizontally Installation.....	13
3.3	Network Connection.....	13
3.3.1	Setting IP Address of PC.....	13
3.3.2	Connect WebBox to the PC.....	16
3.3.3	Connection via Network Router.....	16
3.3.4	Connection via Network Switch.....	17
3.4	Connection to PV System.....	17
3.4.1	RS485 Connection.....	17
4	Internal Server Setting.....	18
4.1	Access to WebBox Internal Server.....	18
4.2	Shine WebBox Settings via Internal Sever.....	21
4.2.1	System Settings.....	21

4.2.2	Set Polling Interval Time	23
4.2.3	Set Date and time	24
4.2.5	Set Weather Station and Smart Meter	24
4.2.6	Set Power Adjustment, Master and Slave	24
4.2.7	Set Anti-reflux Meter and Anti-reflux Switch	25
4.2.8	Set Anti- reflux Power.....	25
4.2.9	Set Combiner Box Address and Switch.....	26
5	Uploading Data to Shine Server	27
5.1	Registration and Login.....	27
5.2	View the Monitoring Data	28
6	Power Management.....	29
6.1	Active Power Reduction	30
6.2	Reactive Power Control	31
6.3	Manage Active and Reactive Power Together	32
7	Device Maintenance.....	32
7.1	Firmware Update	32
7.2	Restart WebBox	32
7.3	Reset the Shine WebBox.....	33
7.4	Clearing up the Record.....	33
7.5	Troubleshooting	34
7.6	Maintenance and Care	34
8	Technical Data	35
8.1	Shine WebBox	35
8.2	Plug-in Power Supply.....	35
8.3	Accessories.....	36
8.3.1	SD Card	36
8.3.2	RS485 Cables	36
9	Contact	37

CONTENT

1 User Manual Information

1.1 Copyright Statement

Copyright © 2012 Shenzhen Growatt New Energy Technology Co., Ltd.
All rights reserved.

No part of this document may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photographic, magnetic or otherwise, without the prior written permission of Shenzhen Growatt New Energy Technology Co., Ltd. Also you can download the latest manual from Growatt website <http://ginverter.com/>.

Copyright No. is G1.1. Growatt reserved the final right of interpretation of this manual. The product parameters, appearances and packages are subject to change without notice. Readers are cautioned, however, that Growatt reserves the right to make changes without notice and shall not be responsible for any damages, including indirect, incidental or consequential damages, caused by reliance on the material presented.

1.2 About Manual

Dear Customer, thank you very much for your trust in our Shine WebBox product, which is developed and manufactured by our R&D department. We sincerely hope it can satisfy your need, also, we're glad to receive your suggestions on improving our product. The target of the manual is to provide the detailed product information, installation, operation and maintenance.

1.3 Target Group

The user manual is applied for technicians and common users to install, debug and Maintain of the Shine WebBox. The readers should be acquainted with some electrical knowledge, electrical schematic and characters of electrical components.

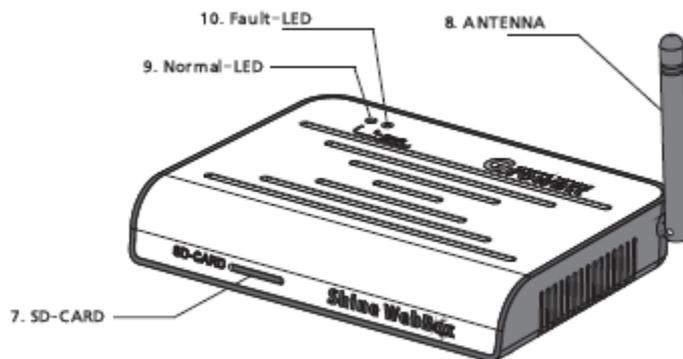
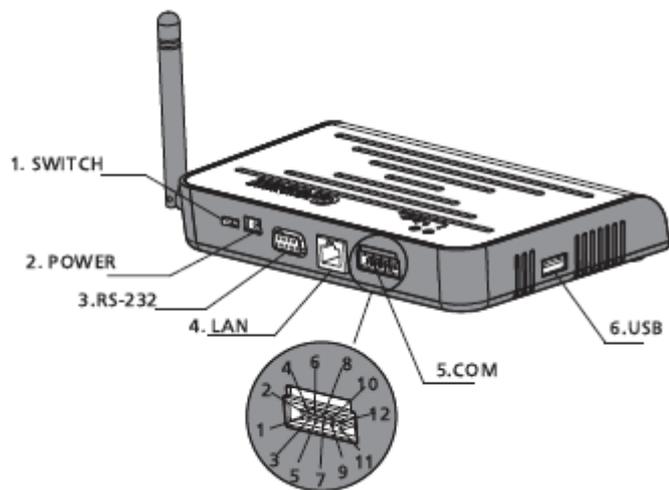
The manual is not including the content of inverter, smart meter, combiner box, environmental monitoring instrument and anti-flux device. If needed, please refer to other user materials from Growatt.

1.4 Guideline

Before using the Shine WebBox, please read the manual carefully. In the meantime, please keep it well, lest maintenance staff may not find it later. All the content, pictures, logos, symbols are reserved. No part of this document may be transmitted in any form without the prior written permission of our internal staff. The content of manual could be changed. Every attempt has been made to make this document complete, accurate and up-to-date. If there are any differences between the contents of the instruction and the product, please regard the actual one as the truth. You can download the newest version from our website www.ginverter.com .

2 Production Description

2.1 Device Overview



2.1.1 Interface

The description of Shine WebBox Interface is listed below.

Number	Name	Function
1	SWITCH	Power Switch: Turn On/Off Shine WebBox
2	Power Port	Power Line: Connect the power line to charger
4	LAN Port	RJ45 port: Connect Shine WebBox to the local network and build connection with Shine Server
5	COM Port	As to COM port, pin 2 and pin 4 are used for RS485 communication; Others for active and reactive power adjustment
6	USB Port	Auto-update via USB flash disk
7	SD-CARD	Data storage via SD-CARD
8	ANTENNA	Receive wireless signal
9	NORMAL-LED	Green LED, normal state
10	FAULT-LED	Red LED, fault state.

2.1.2 Indicator LED

There are 2 Indicator LEDs, with red and green color.

Red LED means fault state, Green LED means normal state

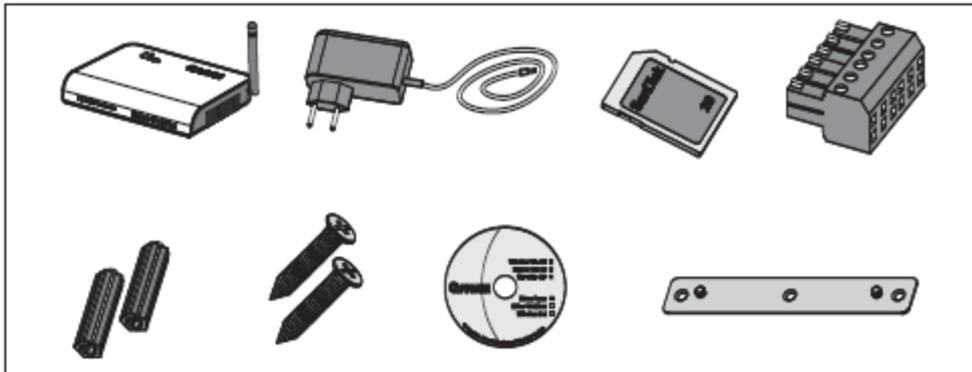
There are 6 different led color combinations which stand for different situations.

Red LED	Green LED	Description
Long lighting	Long lighting	System starting
Go out	Flash slowly	Searching inverters
Go out	Flash quickly	Some inverter is standing by
Go out	Long lighting	Inverters work normally
Long lighting	Go out	No SD card inserted
Long lighting with Bumming	Go out	Inverters report error

2.2 Unpacking and Checking

2.2.1 Packing List

The Shine WebBox and accessories can be found as below.



Label	Name	Amount
1	Shine WebBox	1pcs
2	5V Power Adapter	1pcs
3	2G SD Card	1pcs
4	Terminal (RS485 connection and ripple control receiver)	1pcs
5	Plastic Column	2pcs
6	M3.5*20 Screw Spike	2pcs
7	Shine WebBox Instruction CD	1pcs
8	Bracket	1pc

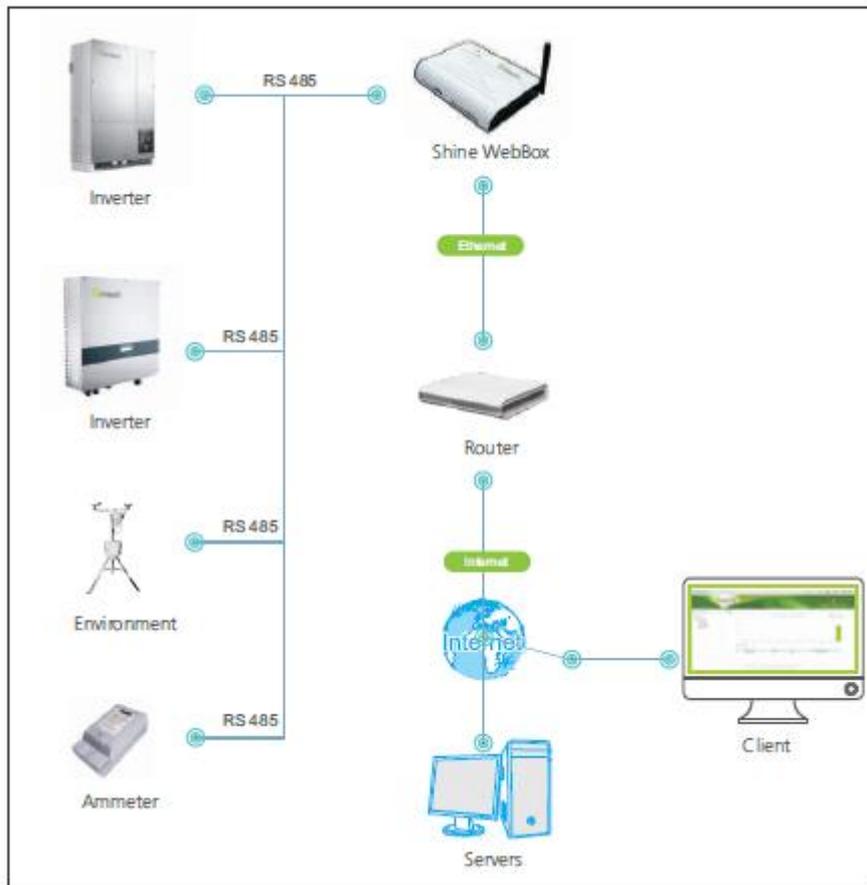
2.2.2 Serial Number and Check Code

The serial number(S/N) and check code (C / C) is marked on the WebBox's packaging box and WebBox's body, serial number consist of 10 digits with letters and numbers, the check code (C / C) consist of 5 digits with letters and numbers. All the serial number and check code are unique, to identify each WebBox. If you want upload inverter data from WebBox to ShineServer, you need add WebBox to your plant with the unique serial number and check code, the "check code" is "validate code" in the shine server.

2.3 Shine WebBox Function Introduction

Shine WebBox can monitor the PV devices via RS485 cable, see below picture of the monitoring system.

Shine WebBox can connect to a local area network via router or switch machine. You can access to WebBox web server with WebBox IP address to check monitoring data, or configurate WebBox network information, then WebBox can upload the inverter data to Growatt ShineServer, you can visit your ShineServer account and check plant real time data in anywhere with ShinePhone APP or ShineServer website. Shine WebBox can communicate with inverters by RS485, and keep the data into the internal RAM or SD card.



3 Installation and Connection

3.1 Requirements for Installation Location

The installation and operation environment need consider below tips:

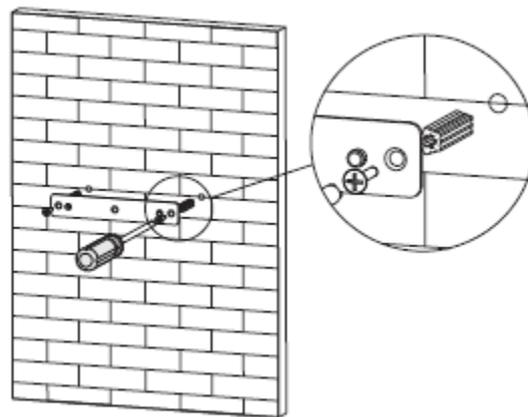
- Indoor installation
- Temperature: from 0 – 45 degree (°C)
- Avoid humid environment
- Avoid being exposed to directly sun radiation
- The maximum cable length of RS485 communication bus is 1200m
- The maximum length of network cable used to connect switch or router is not more than 100m.

3.2 Shine WebBox Installation

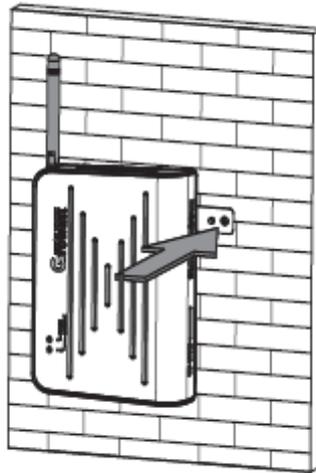
3.2.1 Wall-mounted Installation

Installation Procedure:

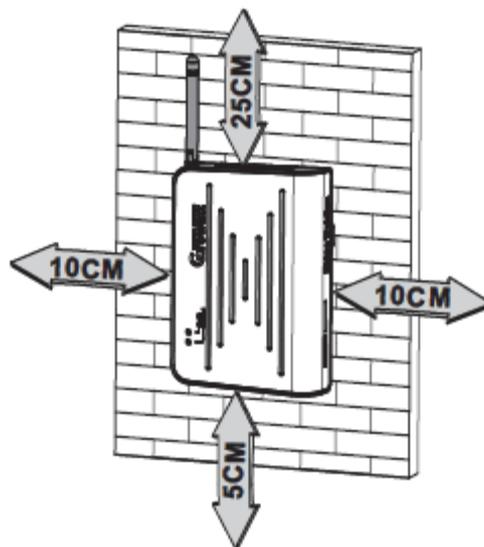
1. Install the bracket on the vertical plane of the wall. Dig two holes according to the dimension of the bracket, there are two screw holes. Use hammer or suitable tools to hit the plastic columns into the two hold on the wall. Use Philips screwdrivers to screw the screws into the columns to install the bracket firmly onto the wall.



2. Hang Shine WebBox onto the bracket through the calabash ports in the back of Shine WebBox.



3. Finish the mounting of Shine WebBox, notice the clearance of mounting.



4. Connect all inverter's RS485 in parallel with RS485 cables, then connect to the WeBox RS48 connector of WebBox.

5. Connect the network cable: insert the network connector to the LAN port on Shine WebBox.

6. Insert the SD card: Insert the SD card into the SD card port on Shine WebBox,

Note: The SD card must be inserted before powering on Shine WebBox, otherwise the SD card would not be recognized.

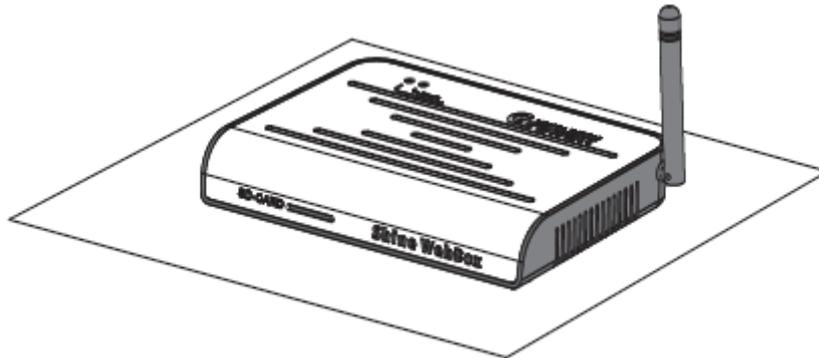
7. Connect the power line: connect the power line to the power port on Shine WebBox.

8. Turn on the power switch to power on Shine WebBox.

3.2.2 Horizontally Installation

Installation Procedure:

1. Set Shine WebBox on a horizontal plane.



2. As to the rest steps, please refer to aforementioned step 4-8 in chapter 3.2.1.

3.3 Network Connection

3.3.1 Setting IP Address of PC

The default network configuration of WebBox is listed as below.

IP address: 192.168.1.230

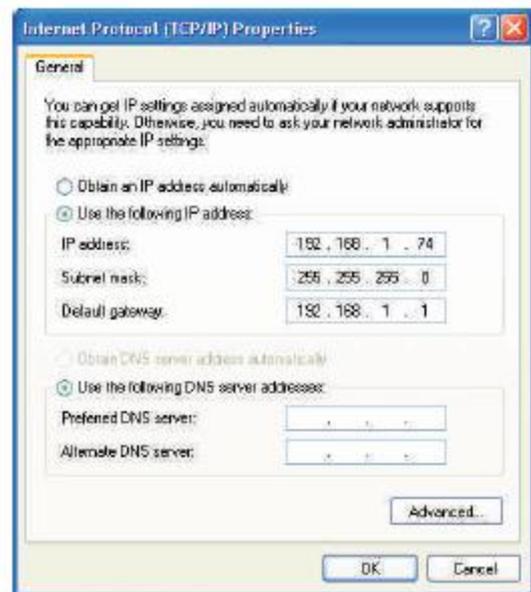
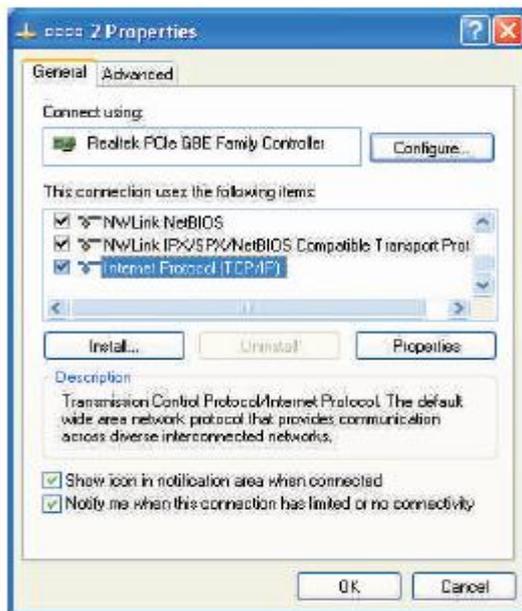
Subnet mask: 255.255.255.0

Default gateway: 192.168.1.1

Note: Before connect to the WebBox internal web page, please make sure your laptop /PC's IP address are in the same network segment with the WebBox.

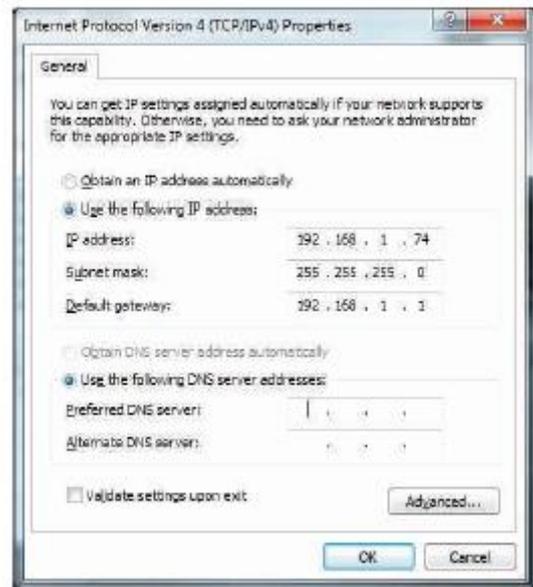
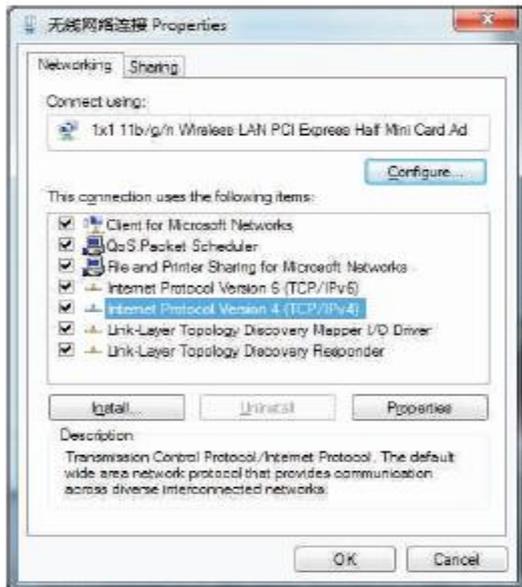
1. Window XP OS

Open the program “Network” → open “Local Connection” → Choose “Internet Protocol version 4 (TCP/IPv4)” → double click to open “Internet Protocol TCP/IP Properties” → “Use the following IP address”, make sure the IP address of the PC and Shine WebBox are in the same network segment. You can set the IP address referring below pictures:



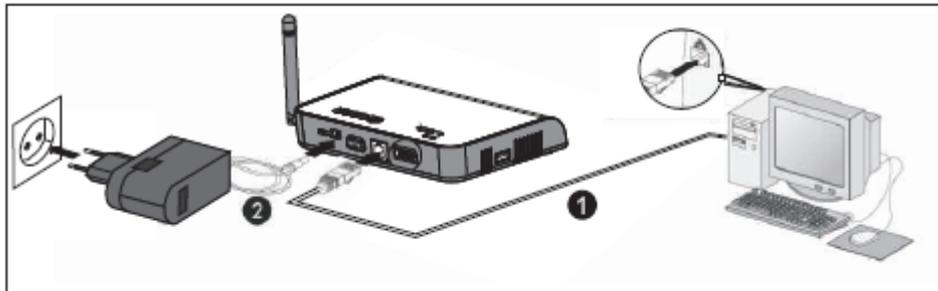
2. Windows 7 OS

Click to open “Network” → “Connection to a network” → “Local Connection” → “Internet Protocol version 4 (TCP/IPv4)”, change the IP address of the PC, make sure the IP address of the PC and Shine WebBox are in the same network segment. You can set the IP address referring below pictures:



3.3.2 Connect WebBox to the PC

1. Power on the Shine WebBox, and connect WebBox to the PC with network cables via the RJ45 ports.

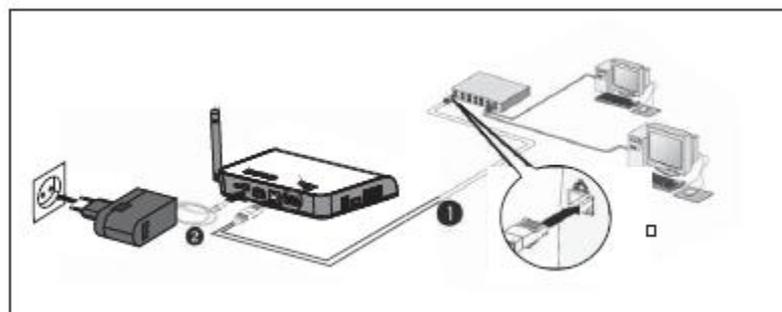


2. Set the IP address of CP or laptop to be in the same network segment, refer to section 3.4.1, if already set, go ahead.

Note: Before connect to the WebBox internal web server, please make sure your laptop or PC IP address are in the same network segment with the WebBox.

3.3.3 Connection via Network Router

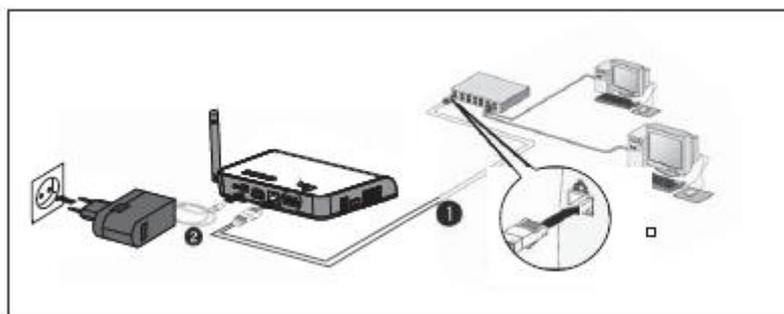
1. Set the gateway of the router to be 192.168.1.1, if don't know how to configure please contact your network manager.
2. Connect the PC and Shine WebBox through the network ports of router and make sure they are work in the same local area network.



3. Check the IP address and gateway of the PC to confirm that the PC connected to router, PC and Shine WebBox are in same network segment.

3.3.4 Connection via Network Switch

1. Connect the PC and Shine WebBox to the network ports of network switch.
2. Set the IP address of the PC and Shine WebBox to be in the same segment.
3. Power on the PC, Shine WebBox and network switch then it's available to get access to Shine WebBox internal server on the PC.

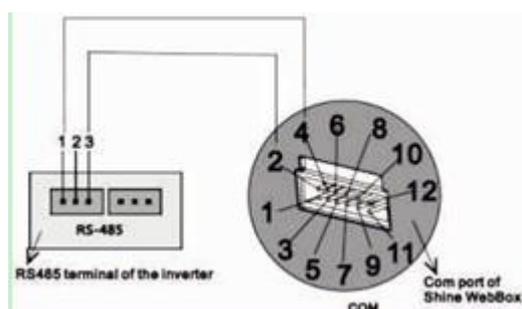


3.4 Connection to PV System

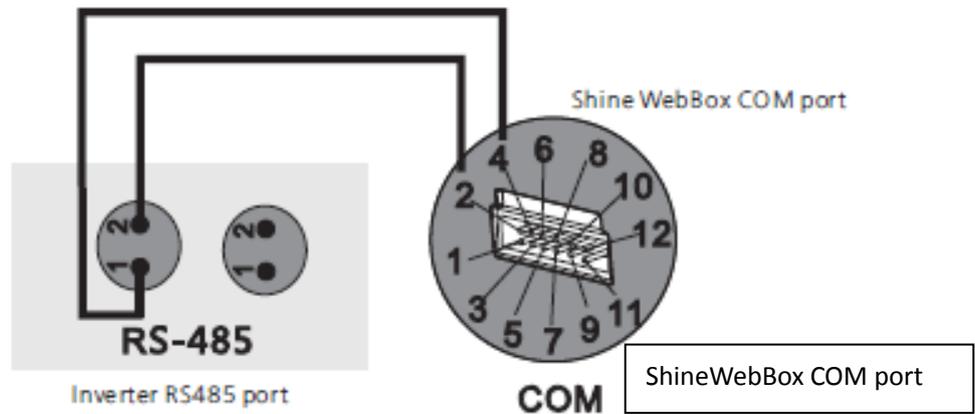
Shine WebBox can monitor Growatt devices in PV system, such as the inverter, weather station and smart meters via RS485 communication.

3.4.1 RS485 Connection

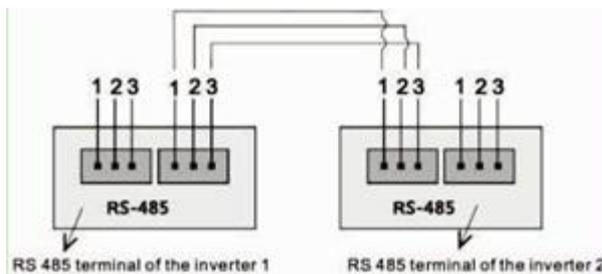
1. Please refer to below picture for the RS485 cable connection, the inverter RS485 T+ corresponding to the Shine WebBox COM port 2#. The inverter RS485 T- corresponding to the Shine WebBox COM port 4#, it's also similar connection with Smart meter, combiner box, weather station, and anti-reflux box. RS485A corresponding to Shine WebBox COM port 2# , RS485B corresponding to Shine WebBox 4# , Ground corresponding to Shine WebBox 8#.
- Note: RS485 shielded cable must be grounded to avoid interference with communication stability.



3. Old version inverter with below connect interface, connection as follows:



2. While monitoring several inverters together, inverters are in parallel connected and then connected to Shine WebBox. The maximum number of inverter can be monitored by Shine WebBox is 32 units.



3. The monitoring of smart meter and environment monitor is similar to inverter, smart meter or weather station and inverters in parallel and then connect to Shine WebBox with RS485 cables.

Note: Shine WebBox can only monitor the inverter, weather station, smart meter from Growatt.

4 Internal Server Setting

4.1 Access to WebBox Internal Server

Before access to WebBox internal server, please make sure all network cables are connected well, and the IP of the PC are correct, then open PC browser, enter

192.168.1.230 in the address bar. To get access to WebBox internal server from PC, please make sure the IP address of PC and WebBox are in the same segment.

Note: when WebBox connects to local network, please confirm the IP address 192.168.1.230 is not occupied by other device. Otherwise the IP addresses will be conflict, you can't get in to WebBox internal web service.

1. Below is the Home page of WebBox internal server.



2. Click "Record" to view the online data of inverters, smart meter, combiner box, weather station and anti-flux device.

Address	Serial_no	State	Outpower(W)	E_Today(KWh)	E_Total(KWh)	2012 Energy(KWh)												Fault code	Last update time
						Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
4	2033023008	Normal	1338.2(46%)	11.9	4192.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	170.7	409.4	217.8	0.0	NO	2012-11-14 16:30:29	
5	2033022941	Normal	2868.8(99%)	18.1	4483.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	152.6	413.5	244.1	0.0	NO	2012-11-14 16:30:31	
6	2033023113	Normal	2820.8(98%)	17.8	4122.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	168.6	380.4	234.8	0.0	NO	2012-11-14 16:30:33	
7	6033045987	Normal	2836.2(98%)	17.1	4260.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	162.2	367.4	228.3	0.0	NO	2012-11-14 16:29:17	
8	2033022917	Normal	2314.6(80%)	17.4	4109.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	165.3	375.1	231.5	0.0	NO	2012-11-14 16:29:20	
9	2033022963	Normal	2752.5(95%)	17.6	3991.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	147.9	24.1	232.9	0.0	NO	2012-11-14 16:29:22	
11	2033022937	Normal	2876.8(100%)	18.2	4044.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	150.9	386.7	242.0	0.0	NO	2012-11-14 16:29:27	
13	B025085329	Normal	2034.2(100%)	13.3	2893.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	132.3	275.8	179.8	0.0	NO	2012-11-14 16:29:31	
19	B025085534	Normal	2026.4(100%)	13.4	2882.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	115.9	281.8	34.5	0.0	NO	2012-11-14 16:29:44	
34	0123456789	Normal	734.6(7%)	19.7	757.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	31.7	304.6	0.0	NO	2012-11-14 16:28:59	
ALL:10pcs			22603.1(82%)	164.5	35738.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1366.4	2945.9	2150.3	0.0			

3. Click “Back Home” to return to the home page, click “Parameter” to WebBox parameter page, where you can check WebBox information and do some setting, see below picture of “Parameter” page:

serial No.	W123456781
Check_code	4B914
Device_type	Shine WebBox_C
Hardware_version	V2.0
Software_version	SW3.8 Build:1611-22

Local_ip: 192.168.3.239
Mask: 255.255.255.0
Gateway: 192.168.3.1
DNS: 114.114.114.114
Server_ip: connect closed
Server_url: server.growatt.com connect ok
Inverter Address_start: 1
Address_end: 32
Delay time(S): 2.0
System_time: 2016-12-06 07:08:46 Enable_write
Zigbee_ID: 6688
Zigbee_channel: 18
Environment: address 36 OFF
Ammeter: address 37 Growatt OFF
Power Adjust: OFF Slave
Anti_reflux_device: address 38 ON Ammeter_ON
Set Anti reflux power : 0.2 kw
Combiner Box: address start 41
address end 50 Growatt OFF
Inverter type: Growatt
 Enable_Reboot Enable_Reset Enable_Clear_record
Save
Back Home

4. Shine WebBox will search inverters according to the inverter address range setting. Any new inverter is detected, will display in the “Record” page, and will update inverter data automatically.

5. Log out from the Shine WebBox internal server when you finish visiting, to do so, just close the Web browser.

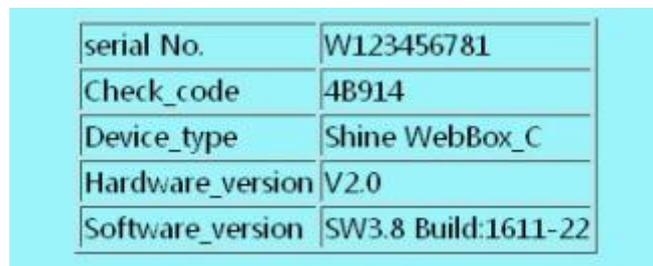
4.2 Shine WebBox Settings via Internal Sever

Shine WebBox settings include: system setting, date and time setting, data upload frequency setting.

4.2.1 System Settings

4.2.1.1 Shine WebBox Information

In the "Parameter" interface, you can view the Shine WebBox device information, including the Shine WebBox serial number, check code, device model, hardware version, and software version. As shown in Figure 4-4:

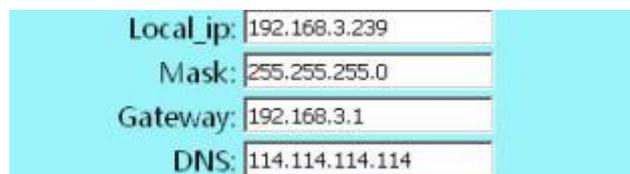


serial No.	W123456781
Check_code	4B914
Device_type	Shine WebBox_C
Hardware_version	V2.0
Software_version	SW3.8 Build:1611-22

Figure 4-4

4.2.1.2 Set Network Address of Shine WebBox

Shine WebBox address settings include: IP address, subnet mask, gateway and DNS settings. As shown in Figure 4-5 below, if the network IP address of the Shine WebBox is the same as the three digits in front of the gateway, you only need to set the IP address to Shine WebBox, no need to set the subnet mask, gateway or DNS.

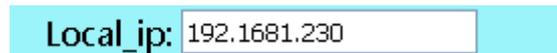


Local_ip:	192.168.3.239
Mask:	255.255.255.0
Gateway:	192.168.3.1
DNS:	114.114.114.114

Figure 4-5

1. Log in to the Shine WebBox internal server page via local access and click "Parameter" to get into the parameter settings page.
2. Find "local_ip", enter the fixed IP address your plan for the WebBox, the default address is 192.168.1.230, and you can change it to 192.168.1.240, default value is as

following picture.



3. The subnet mask of the Shine WebBox and that of the network or router which Shine WebBox accesses should be the same.

4. Set the default gateway of the Shine WebBox same as that of the router which WebBox connects to. Please confirm the default gateway is compliant with the network.

5. Normally DNS is equal to the default gateway. Also you can set the DNS same as the network.

6. After configuration all parameter above, click “save” bottom. After setting the IP address successfully, restart the Shine WebBox, then you can get access to the WebBox with the new IP address via browser.

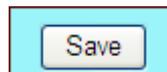


Figure 4-7

4.2.1.3 Set IP Address of the Server

Usually you don't need set the IP address of this part, because WebBox will connect to server with the default domain url.

If WebBox can't connect to Shine Server with domain url, you can set the IP address as below steps:

1. In the "Parameter" interface, "Server_ip" part, modify the ShineServer IP to 198.11.169.241 (oversea Shine Server IP address),as shown in Figure 4-8:



Figure 4-8.

2. Click "Save" to save the change, and after done, WebBox will upload data to the server.

If WebBox is working in a local Network, and update monitoring data to a local server database, then you need change the "Server_ip" to the IP address of the local server database.

4.2.1.4 Set Domain Url of Shine Server

"Parameter" page, in the "Server_url" part, you can modify the ShineServer domain url.

International user server domain url is: server.growatt.com

Chinese user server domain url is: server-cn.growatt.com

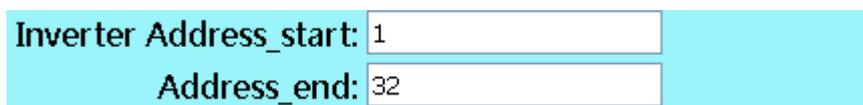
The default domain name is "server.growatt.com", as shown in Figure 4-9. If you visit the Shine WebBox internal server and found the domain url not correct, please change to "server.growatt.com" (International User). Then make sure Shine WebBox uploads data to the Shine Server.



Figure 4-9

4.2.1.5 Set Inverter COM port Address Range

1. "Parameter" interface, settings of inverter address range, " Address_start" and "Address_end" is the range of inverter COM address, the default start from 1, and end with 32. As shown in Figure 4-10, the range of the start address can be modified, but the start address must be less than the end address. All of the monitored device must be within the range, otherwise the inverter beyond the range can't be monitored.



2. Click "save" button, wait the feedback of configuration has been carried out successfully.

4.2.2 Set Polling Interval Time

1. In "Parameter" page, the "Delay time (S)" is the polling interval time setting, in the drop-down list, you can choose "1.5s, 2s, 2.5s, 3s,", the default is 2S no need to change, as shown in Figure 4-11.

Delay time(S): 2.0 ▼

Figure 4-11

2. Click "Save" to complete, if you change the time

4.2.3 Set Date and time

Change the time on the Shine WebBox internal server page

1. Check "Enable_write" after "System_time". Figure 4-12 Set the system time.

System_time: 2017-03-27 11:36:50 Enable_write

2. Enter the time and date to be changed, click "Save", save successfully, and become time for the WebBox.

4.2.5 Set Weather Station and Smart Meter

When the Shine WebBox is connected to weather station or a smart meter, you need to enable this feature through the Shine WebBox internal server settings.

1. If there is a weather station in the system need monitored, please enable it first, in "Environment: address" under the "Parameter" interface, select on in the drop-down list, click "Save" under the page. The Shine WebBox enables the weatherstation monitor.

Note: The weather station COM address default is 36, you don't need to change it on WebBox internal page, also no need to change the COM address of weather station.

3. If there is a smart meter, similar, only need enable it, "Ammeter: address" right side, in the drop-down list select "ON", and click "Save" button.

Note:

1. Only the smart meters and weather stations buy from Growatt can be monitored by WebBox.
2. Only after enabled these function, then you can see monitoring data on Growatt and Growatt Server, and for rated function, such as anti-reflux function via WebBox.

Environment: address 36 OFF ▼
Ammeter: address 37 Growatt ▼ OFF ▼

4.2.6 Set Power Adjustment, Master and Slave

In the "Parameter" interface under the "Power Adjust" after the drop-down list, select "ON", in

the back of the drop-down list, select "Host", and click "Save" to open the Shine WebBox power adjustment. As shown in Figure 4-15 to open the power adjustment, in the same local network, only one "host", all other settings for the "slave".

Note: Only after enabled these function, then it will work, otherwise, system may not work correctly.



Figure 4-15

4.2.7 Set Anti-reflux Meter and Anti-reflux Switch

In the "Parameter" interface, "Anti_reflux_device" is to enable the anti-reflux function, the default address is 38, you don't need to change it, if your system with an anti-reflux device, please switch it on by select "ON" in "Ammeter -OFF/ON" drop list. Note: There is no corresponding function device, prohibit the opening of this switch, otherwise it may cause the equipment is not working properly.



Figure 4-16

4.2.8 Set Anti- reflux Power

In the "Parameter" interface "Anti reflux power" is for setting anti-reflux power

Note: Positive number means that can take power from the grid, can not appear countercurrent.

A negative number indicates that a power can be transmitted to the grid, allowed a certain countercurrent.

For example:

1. Set the value to 0.2KW, means allow use 0.2KW from grid.
2. Set to -0.2KW, means allow deliver 0.2KW to grid.



Figure 4-17

4.2.9 Set Combiner Box Address and Switch

In the "Parameter" interface, "Combiner Box: address start" after the text box to set the start address, the default value is "41", you don't need to change it.

In the "address end" after the text box set the end address, the default value is 50, followed by the check box for the fuse box switch.

Note: There is no corresponding function device, prohibit the opening of this switch, otherwise it may cause the equipment is not working properly.



Combiner Box: address start 41
address end 50 Growatt OFF

Figure 4-18

4.2.10 Inverter Model Selection

In the "Parameter" interface under the "Inverter type" after the drop-down list is now the inverter model, temporarily only support Growatt inverter.



Inverter type: Growatt

Figure 4-19

4.2.11 Inverter Fault Indication

There are two ways to indicate the inverter fault:

1. The status LED of the Shine WebBox will turn to red, accompanying with beeping for 1 min.
2. In the integrated server interface of the Shine WebBox, the data about the inverters are shown in red.

5 Uploading Data to Shine Server

5.1 Registration and Login

On Shine WebBox internal server, you can only check the real-time data. But you can check your plant data at anytime in everywhere from Shine server account, Shine WebBox can upload all your system information to Shine Server database every 5 minutes, you can check real-time data and history data on Shine server. First, you need register an Shine server account.

(1) Login Growatt Shine server

The international user server domain url is: <http://server.growatt.com>

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



Figure 5-1

(2) Click "New User", and fill in the rated information, click on "Register".

Note: "Datelog SN" and "datalog valicode " you can get from ShineWebBox internal server, it's "serial number" "Check_code" in "paramerer" page, see Figure 4-3.

Register

country *

中国客户请点击(chinese user click) server-cn.growatt.com

username *

password *

password confirm *

E-Mail *

company name

telephone

Agent code

datalog sn

datalog valicode

timezone * Language *

valicode P6L agree (Terms of Use)

Figure 5-2

5.2 View the Monitoring Data

(1) After register, it will automatically jump to the Shine Server main interface. Click on the "power plant" → "plant data", as shown in Figure 5-3, the information displayed for the daily power chart of the plant. In drop-down list "select Datalog", you can choose to see inverter data and chart.

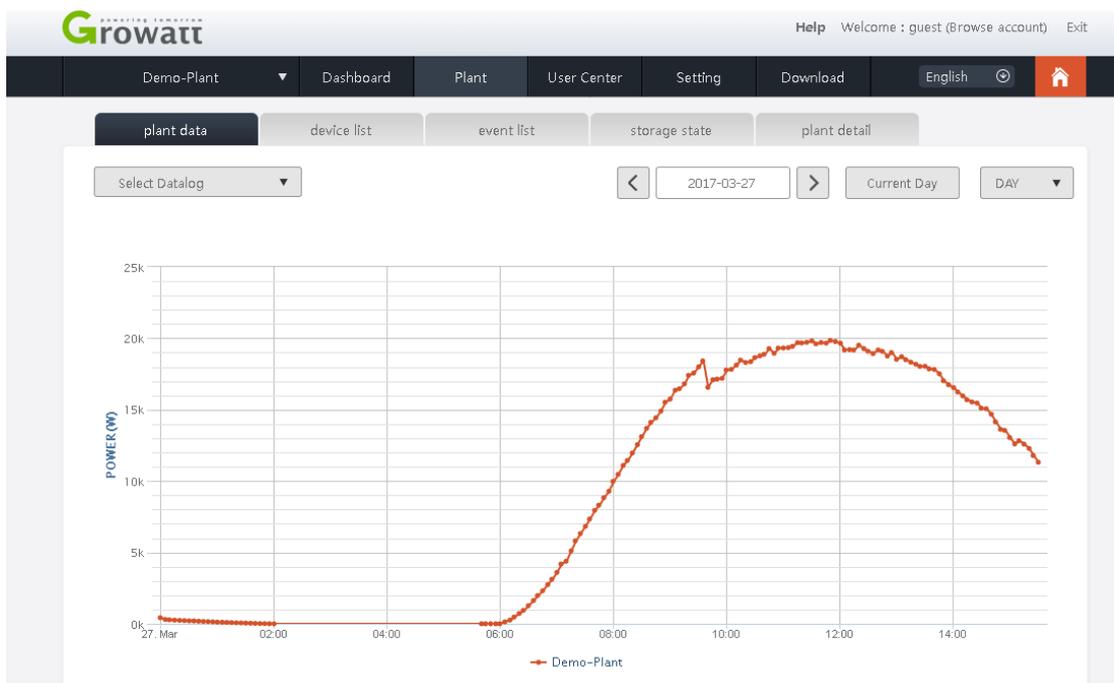


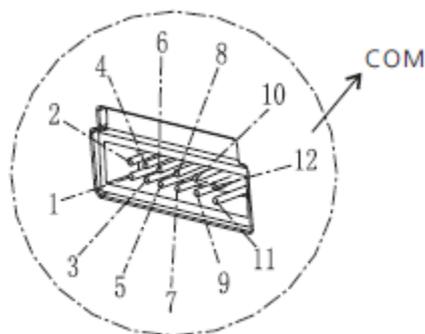
Figure 5-3

(2) Click "Power plant" → "Device list" to view real-time data such as " Datalog", "Inverter", "Storage", "Environmental Monitor", " Electric-meter " and " Convergence box "

device list										
datalog inverter environ monitor electric-meter convergence box storage pid										
No.	SN	alias	device type	user name	connection status	IP & Port	data update interval	last login/update time	firmware version	operating
1	4K16184253	4K16184253	ShineWiFi	guest	connection	/103.56.182.243:1032/	5	2017-03-27 15:39:17	1.0.6.9	∅
2	4K16183110	4K16183110	ShineWiFi	guest	connection	/86.84.72.137:1028/	5	2017-03-27 15:38:41	1.0.6.9	∅
3	AH55321779	AH55321779	ShineWifiBox	guest	connection	/83.163.148.208:3086/192.168.10.100	5	2017-03-27 15:37:20	4.0.0.0	∅
4	AH55321345	AH55321345	ShineWifiBox	guest	connection	/178.84.71.58:43813/192.168.10.100	5	2017-03-27 15:37:55	4.0.0.0	∅
5	7906230006	7906230006	ShineGPRS	guest	connection	/117.136.42.214:22929/	5	2017-03-27 15:39:02	1.0.0.4	∅
6	D0AAAAA009	D0AAAAA009	Shine3G	guest	connection	/117.136.42.131:12464/	5	2017-03-27 15:38:02	1.0.0.1	∅
7	4K26211757	4K26211757	ShineWiFi	guest	connection	/84.31.93.109:1030/	5	2017-03-27 15:39:08	1.0.6.9	∅

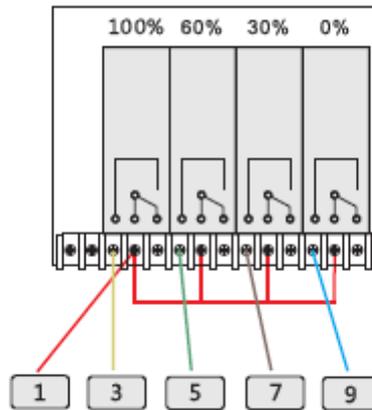
6 Power Management

Shine WebBox power management is composed of active power reduction and reactive power control components. To enable power management, a ripple control receiver is required. This function is available when user activates it. The COM ports of the Shine WebBox are shown as below. Pin 1,3,5,7,9,11 are used to connect the ripple control receiver.



6.1 Active Power Reduction

There are 4 power levels, 100%, 60%, 30% and 0%. The connection between ripple control receiver and Shine WebBox is shown as below.

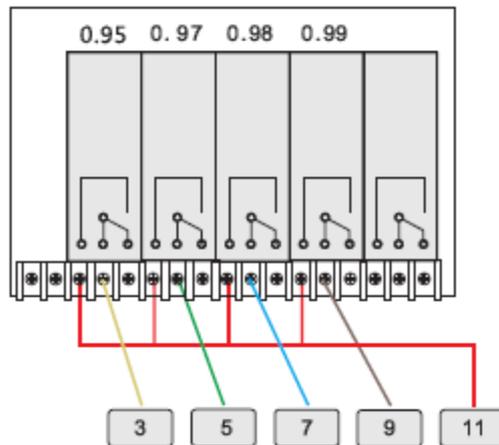


The output power of inverter depends on the operating relay. The detail information is shown as below. Pin 1 is connected to 3.3V dc source.

Pin	Status	Explanation
1	3.3V DC source	Powering relays
3	100% output power	When the relay corresponding to pin 3 actions, the inverter outputs 100% of nominal power.
5	60% output power	When the relay corresponding to pin 5 actions, the inverter outputs 60% of nominal power.
7	30% output power	When the relay corresponding to pin 7 actions, the inverter outputs 30% of nominal power.
9	0% output power	When the relay corresponding to pin 3 actions, the inverter outputs 0% of nominal power.

6.2 Reactive Power Control

There are 4 power factor levels, 0.99, 0.98, 0.97, and 0.95. The connection between ripple control receiver and Shine WebBox is shown as below.

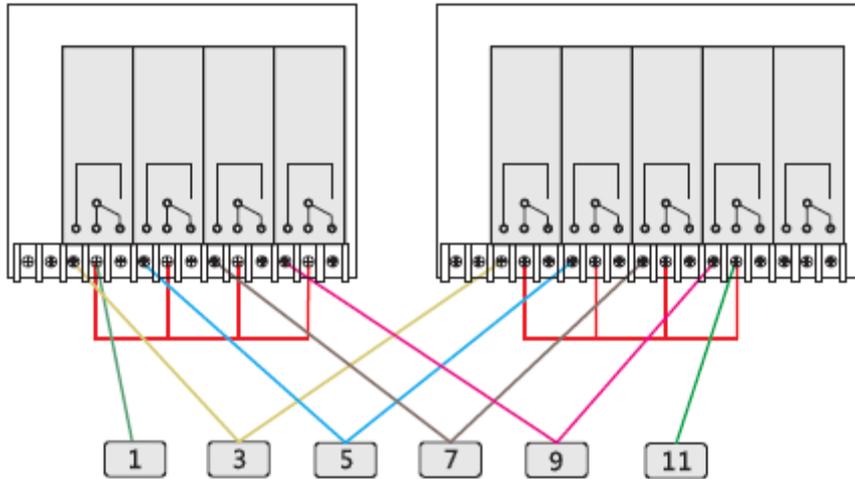


The output reactive power of inverter depends on the operating relay. The detail information is shown as below. Pin 11 is connected to 3.3V dc source.

Pin	Status	Explanation
9	0.99 PF	When the relay corresponding to pin 9 actions, the power factor of the output power is 0.99
7	0.98 PF	When the relay corresponding to pin 9 actions, the power factor of the output power is 0.98
5	0.97 PF	When the relay corresponding to pin 7 actions, the power factor of the output power is 0.97
3	0.95 PF	When the relay corresponding to pin 9 actions, the power factor of the output power is 0.95

6.3 Manage Active and Reactive Power Together

If active power and reactive power need to be managed at the same time, connect the Shine WebBox with two ripple control receivers as below.



7 Device Maintenance

7.1 Firmware Update

There are 2 ways to update WebBox firmware:

1. You can update WebBox firmware by using a USB flash disk, please contact Growatt service department for the latest firmware version and update guide.
2. If your WebBox is well monitored by Growatt Shine Server, Growatt engineer can help update your WebBox firmware remotely, just make sure your WebBox online.

7.2 Restart WebBox

1. You can turn off Webbox via the power switch, and turn on it again.
2. Restart from the WebBox internal server page as below picture, and click "Save".

The screenshot shows a light blue rectangular area containing three checkboxes: Enable_Reboot, Enable_Reset, and Enable_Clear_record. Below the checkboxes is a 'Save' button and a 'Back Home' link.

7.3 Reset the Shine WebBox

Before rest the Shine WebBox, please login Shine WebBox internal server, and in bottom of “Parameter” page:

1. Select “Enable_Reset” as below picture.

This screenshot is identical to the one above, showing the parameter page with Enable_Reset selected.

Figure 7-1

2. Click on “save”, then Shine WebBox would restore factory settings after restarts.

Note: After reset to factory setting, you can login WebBox internal server with the default IP address, refer to 3.4 Network Connection.

7.4 Clearing up the Record

1. In bottom of “parameter” page, select “Enable_Clear_record”.

The screenshot shows the parameter page with Enable_Clear_record selected, while Enable_Reboot and Enable_Reset are unselected. The 'Save' button and 'Back Home' link are also present.

Figure 7-1

2. Click on “save”, all the devices information records would be wiped out after the Shine WebBox restarts.

7.5 Troubleshooting

Problem	Cause	Solution
No inverter was found	Inverter address was not correctly	Reset inverter address, make sure every inverter address is unique and in the allowed range
Can't access to WebBox internal server via PC / laptop	WebBox and the PC/laptop are not in the same network segment	Make sure the WebBox and PC/laptop, router in the same segment, or contact your network administrator for help.
Can't access to Growatt Shine Sever	PC or laptop not connect to internet correctly	Make sure PC or laptop connect to internet, and make sure visit the right website www.growatt.com
WebBox can't deliver data to Growatt Shine Sever	WebBox IP address is occupied by other equipment in the same network.	Change WebBox IP address or contact network administrator for help.

7.6 Maintenance and Care

1. Regularly check if webbox working normally, and if there is any damage or dirt on WebBox.
2. WebBox can only be used indoor, protect WebBox from wet conditions and direct sunlight.

8 Technical Data

8.1 Shine WebBox

Mechanical data ---

Width*height*depth 185mm* 125mm * 30mm

Net weight 420g

Environmental conditions ---

Ambient temperature 0 °C... 45°C

Degree of protection IP 20

Mounting location Indoor

Communication ---

Rs485 communication Maximum 30 inverters

Wireless communication ZigBee ,maximum 15 inverters

Rs485 communication range 1200m,STP

ZigBee communication range 300m,obstruction free

8.2 Plug-in Power Supply

Power supply ---

Input 100~240V 50/60Hz

Output 5Vdc,2000mA

8.3 Accessories

8.3.1 SD Card

There is a SD card of Shine WebBox with 2G memory, and valid for 5 years. The SD card storages WebBox system files and monitoring data, when WebBox is not connect to Shine Server correct, and upload to Shine Server when on-line again.

8.3.2 RS485 Cables

To ensure the stable communication between the Shine WebBox and inverters, we suggest use RS485 cable that consists of STP (shielded twisted pair) . The maximum length of RS485 communication is 1200m. Below is suggestion for the RS485 cable:

Cable length	Specification
< 200m	2*0.3mm ² , twisted-pair, bushing
200-500m	2*0.5mm ² , twisted-pair, bushing
500-1200m	2*0.75mm ² , shielded twisted pair, bushing

9 Contact

If you have technical problems concerning our products, please contact the Growatt serviceline.

GROWATT NEW ENERGY

Building B, Jiayu Industrial Zone, #28 Guanghui Road, Longteng Community, Shiyan, Baoan District, Shenzhen, P.R.China.

Service hotline: +86 755 27471942

E-mail: service@ginverter.com

Website: www.ginverter.com