



LeadSolar Gateway 2.0
Installation & Operation Guide

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Ver 1.0

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1. Gateway Introduction

Thank you for purchasing LeadSolar Gateway 2.0!

LeadSolar Gateway 2.0 is a type of enhanced gateway, which is designed for communicating with LeadSolar LS series microinverters. It is a wireless router, which hardware is based on the world's top chipset MTK chipset, and it supports IEEE 802.11b/g/n. It can connect with your wireless network at home quickly and it will forward data from microinverters to LeadSolar Monitoring Platform through the Internet.

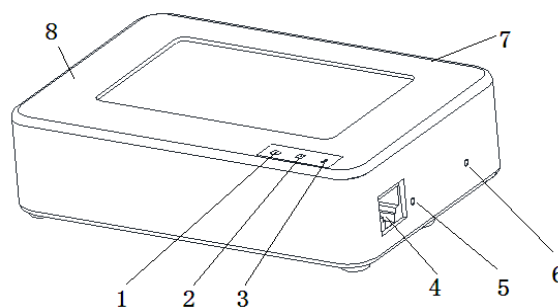
1.1 Packing List

Please check all goods in the box according to the following list:

- 1 X LeadSolar Gateway 2.0
- 1 X AC Power Plug
- 1 X Micro-SD Card

Please contact with the installer or LeadSolar Energy, if you find there is missing good or damaged good in the above list.

1.2 LED and Ports



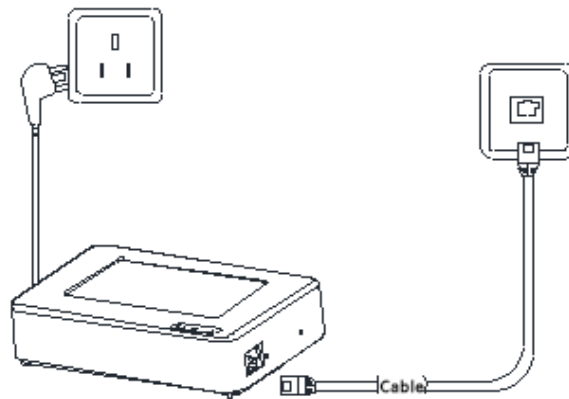
LED	State	Note
1	flashing	The gateway is communicating with microinverters via power line.
2	flashing	The network port is working properly.
3	continuous light	The power supply is working properly.
4		It is RJ45 port, which is used to be connected with router by a cable.
5		It is the system reset button. After you pressing this button for 1 second, the gateway will restart.
6		It is power line service button.
7		It is a port for inserting a Micro-SD card. Please use the Micro-SD in the packing box.
8		It is AC power input port. Please use the standard AC power plug in the packing box.

2. Gateway Installation

- Please use the AC power plug in the packing box to connect with the gateway.
- Plug the gateway to the plug on the wall. The gateway should be the same phase with microinverters.
- Use a cable to connect the gateway with your router. You also can use wireless connection.

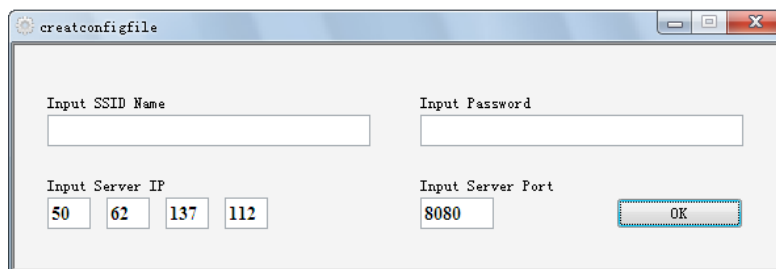


If you do not use the standard AC power plug in the packing box, it maybe cause damage to the gateway.



3. Set up Network Connection

- Download the configuration tool (creatconfigfile.exe) from LeadSolar website: www.lead solarenergy.com
- We suggest it is used with Windows 7. If you are using Windows XP, please download and install Microsoft.net framework suite.
- Active the configuration tool



- Input SSID and password of your wireless router

Input SSID Name
Input Password

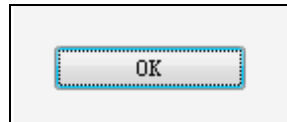
- Input server IP and server port



Except special cases, you do not need to change the default server IP and server port.

Input Server IP	Input Server Port
50 62 137 112	8080

- Press “OK” button



- If following dialog box appears, that means there is another network configuration file exists. If you want to cover the previous one, you can press (Y) button. If you do not want to cover the previous file, you can press (N) button.



- Then you can find that there is following files appear.

network.conf	1 KB
server.conf	1 KB
wifif.conf	1 KB
wifin.conf	1 KB

- Copy the above files into the Micro-SD card

File	Size
server.conf	1 KB
wifif.conf	1 KB
wifin.conf	1 KB
wifip.conf	1 KB

- Insert the Micro-SD card into the gateway
- Plug the gateway on the power supply socket

4. Register LeadSolar Microinverters

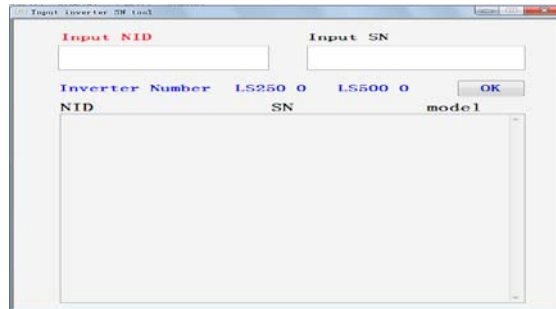
LeadSolar Gateway 2.0 supports local monitoring without Internet connection. The screen of the gateway shows power generation and some diagrams. You need to register microinverters on the gateway first.

If you want to monitor your system on line, please refer to the web monitoring manual. You can download it from LeadSolar web site:

www.leadsolarenergy.com

4.1 Prepare Configuration File

- Download the configuration tool (input inverter SN tool.exe) from LeadSolar website: www.leadsolarenergy.com
- We suggest it is used with Windows 7. If you are using Windows XP, please download and install Microsoft.net framework suite.
- Active the tool on your computer



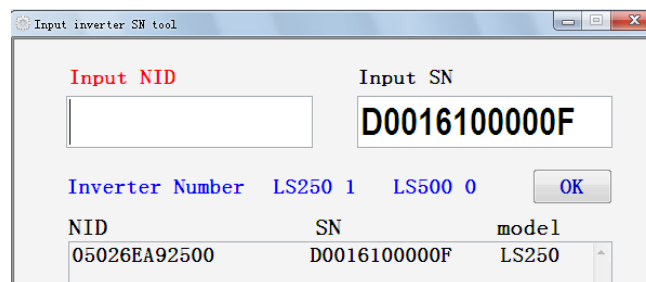
- Input ID of microinverters into the box “Input NID” by barcode scanning device or by manual
- Input SN of microinverters into the box “Input SN” by barcode scanning device or by manual



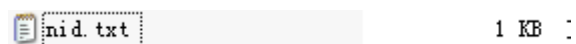
You should first input ID then input SN. You should input ID and SN of microinverter one by one. That means you cannot input ten IDs of ten microinverters and then you input ten SNs.



If you use barcode scanning device, you just scan ID then SN of the microinverter. If you input them by manual, you need to press “Enter” button for each input.



- After you finish inputting all IDs and SNs, you can find a nid.txt file appears.



4.2 Configuration of Gateway NID file

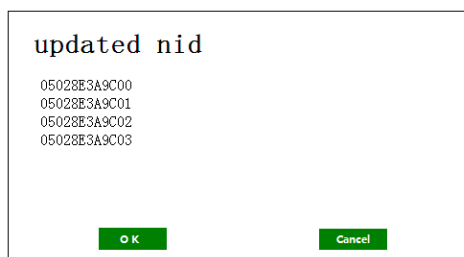
- Copy the above nid.txt under the folder “leadsolar” of your Micro-SD card.

Name	Size	Type
ini.d.txt	1 KB	text

- Insert Micro-SD card into the gateway and connect the gateway to the power supply

4.3 Update NID

- When restart the gateway, NID update box appears. If you want to update NID, please press “OK” button, otherwise, please press “Cancel” button.



5. Check System Data

5.1 Check System Performance

After you configuring the gateway and registering all microinverters on the gateway, you can get following information on the screen:

- Power: total current power generation of the system
- E-Today: total power generation of today
- E-Total: total power generation after system has been installed

Power	3201	w
E-Today	35.6	kWh
E-Total	562	kWh

5.2 Check Historical Record of Power Generation

If you press the touch screen, you can go to second page, which shows power generation in the past seven days. The abscissa (X axis) shows days. The ordinate (Y axis) shows power generation (KWh).

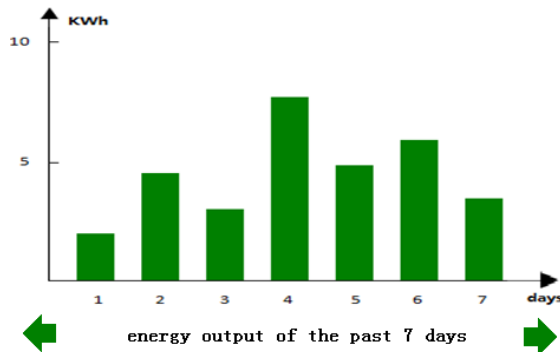
In the following figure, 10 in the Y axis means theoretically, the maximum power generation of the system is 10 KWh.



If power generation in one day is lower than 1KWh, the bar chart will look like zero.

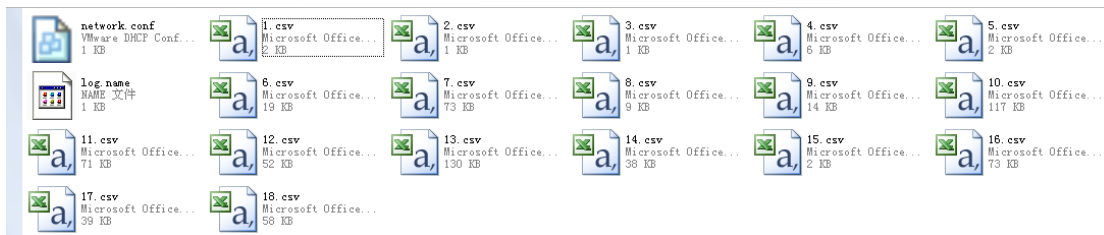


It is better for you to keep the gateway running for 24 hours. Because the gateway cannot get data from microinverters when it is power off. And you cannot get the right power generation record.



5.3 Check Statement of Microinverter

- Power off the gateway and take out Micro-SD card
- Insert Micro-SD card into computer and open “leadsolar” file
- All the files, which have “.csv” suffix, are recorded statements of microinverters
- The statements include three types: “normal”, “error”, “offline”
- Normal: microinverter works normal
- Error: microinverter has error
- Offline: microinverter is offline



	A	B
1	NID	States
2	05039C58B100	normal
3	05024E994800	offline
4	05024EDD4500	normal
5	05024EA7A900	normal
6	05024ED8EA00	normal
7	05024EB43A00	offline
8	05024ECF0400	normal
9	05039C880500	error
10	05024E9FCC00	normal
11	0501E40B5D00	normal
12	05024E9FF700	normal
13	05024EB20500	normal
14	05024ED28100	normal
15	05039C880500	error

Appendix

1. Explanation of Professional terms

- SSID:

Each BSS or ESS is identified by a service set identifier (SSID) - a 1 to 32 byte string. This is normally a human-readable string and thus commonly called the "network name". In an IBSS, the SSID is chosen by the client device that starts the network, and broadcasting of the SSID is performed in a pseudo-random order by all devices that are members of the network.

At user's home, SSID is the name of the wireless network. So LeadSolar gateway needs to get the right SSID and password to connect with the router via WiFi. There should be no space before or after SSID.

2. Datasheet of LeadSolar Gateway 2.0

Communication	
Power line	Power line communication
Ethernet	10/100 Base T, IEEE 802.11b/n/g
Maximum number of microinverter connection	40
Antenna	Omnidirectional high-gain antenna
Power Requirement	
AC outlet	85 ~ 265 VAC, 50/60Hz
Data Record	
System log	Record state of the gateway
Micro-SD card	Record network information, IDs and SNs of microinverters
Mechanical Data	
Dimension (W x H x D)	12.2 cm x 8.2 cm x 2.8 cm
Weight	380 g
Ambient temperature range	-20°C ~ 85°C
Cooling	Natural convection
Enclosure environmental rating	Indoor
Options	VDE-4105 compatible
Additional Functions	
Monitoring	Local monitoring without the Internet
Other functions	Register microinverters with SD card; operating on touch screen

3. FAQ

1. Q: Shall I connect LeadSolar gateway to my router for monitoring?
A: If you want to get detailed information, or monitoring your system on your PC, pad or mobile, you can connect the gateway to your router and create an account on the website www.leadsolarenergy.net. If you do not have the Internet at home, you just need to register your microinverters on the gateway and get information from the screen of the gateway.
2. Q: How many microinverters can be connected with the gateway?
A: It supports connect with 40 LeadSolar microinverters (LS250 or LS600).
3. Q: Can I use LeadSolar gateway to monitor inverters of other brand?
A: No.
4. Q: How long can the gateway record the data from microinverters?
A: 7 days.
5. Q: How can I get the data 7 days ago?
A: You need to create an account on the website www.leadsolarenergy.net and register your gateway and all microinverters. Then you can get more information of your system.
6. Q: Can I turn off the gateway?
A: Yes. But it cannot receive data from microinverters when it is power off.
7. Q: Why the gateway cannot talk to the microinverter after I configuring the network and registering all microinverters?
A: Please check IDs and SNs of microinverters and reboot the gateway and wait for 15-20 min. The gateway needs to talk to each microinverter. So the gateway needs more time to communicate with all microinverters if the system size is big.
8. Q: Shall I plug the gateway anywhere at home?
A: We suggest you to plug the gateway close to your distribution panel (junction box). Because there is noise, which effects communication between the gateway and microinverters, on power lines. Besides, if you want to the gateway forward data to the Internet, you need to plug the gateway where it can communicate with your router via WiFi.
9. Q: Can I use my PC, pad or mobile to connect with the gateway?
A: No.



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