ShineBus User Manual

V2.0

2013-09-11

Contents

1.Introduction

ShineBus is Growatt company for the photovoltaic inverter product design of more than one language, multi-function, concise operating tool. Have the product information read, product parameter setting, products such as the firmware upgrade function;

Operating environment: Windows 2000 / XP/Vista / 7;

Communication mode: RS232

Communication Protocol: Growatt PV Inverter Modbus RS485 RTU Protocol;

Support firmware: *. Mot, *. Hex, *. Bin;

Support equipment: Growatt company Modbus protocol of photovoltaic inverter;

2. Installation

2.1   Run ShineBus. Msi installation files.
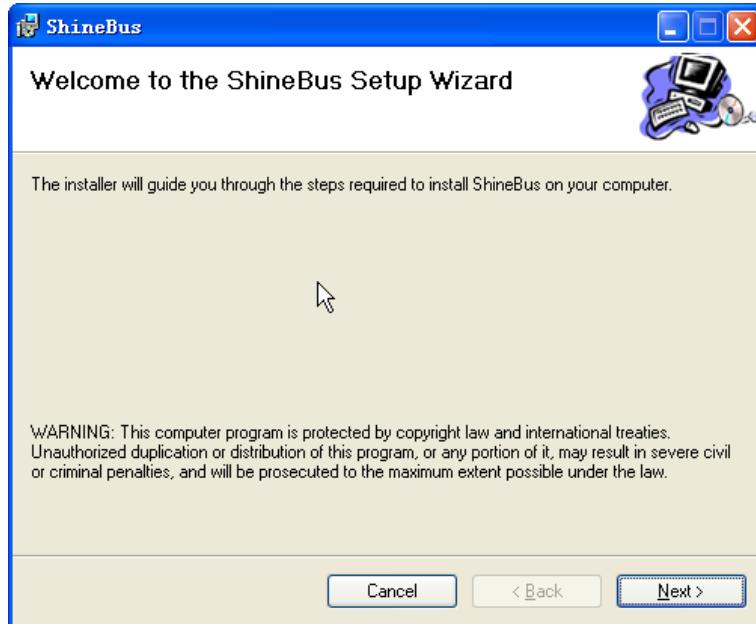
2.2 click "Next" to continue to the Next step, choose to install path and users.

ShineBus

Select Installation Folder

The installer will install ShineBus to the following folder.

To install in this folder, click "Next". To install to a different folder, enter it below or click "Browse".

Folder:

`C:\Program Files\Growatt\ShineBus\`   [Browse...]

[Disk Cost...]

Install ShineBus for yourself, or for anyone who uses this computer:

● Everyone
○ Just me

[Cancel]   [< Back]   [Next >]
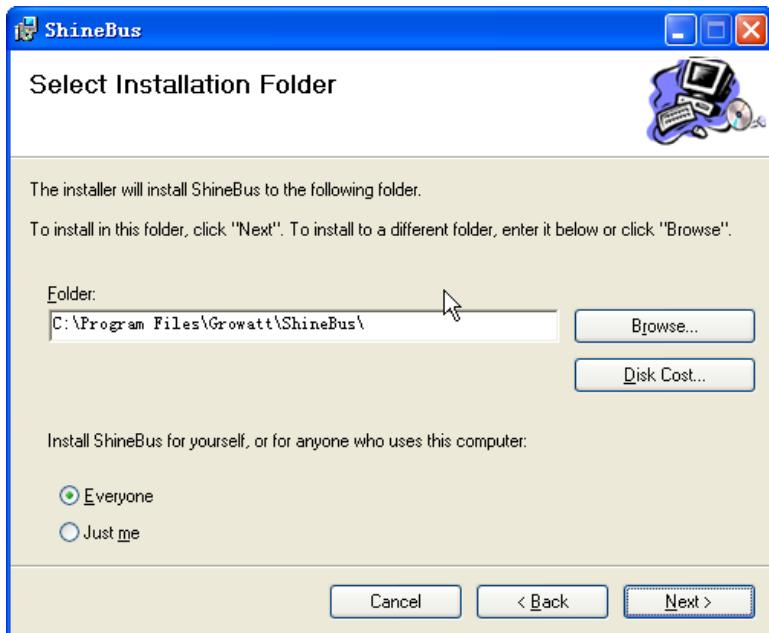
2.3 click click "Next" to continue to the Next step, waiting for the end of installation.

ShineBus

Installation Complete

ShineBus has been successfully installed.

Click "Close" to exit.

[Cancel]   [< Back]   [Close]
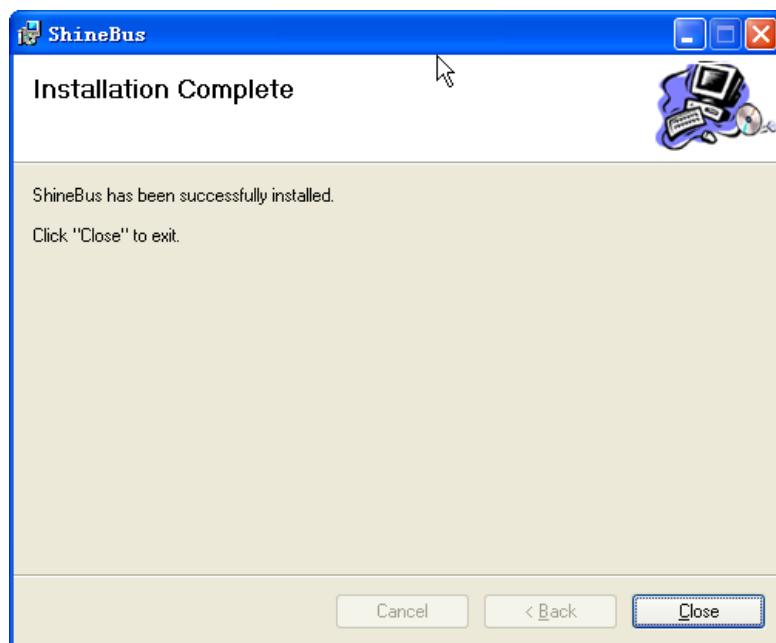
3. Software instructions

3.1 Operation software
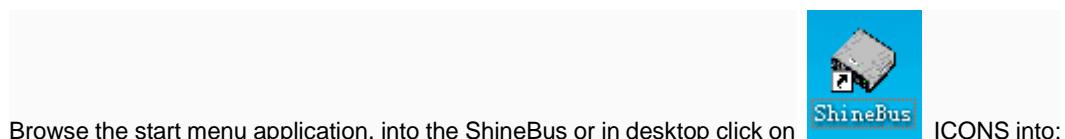
Browse the start menu application, into the ShineBus or in desktop click on ICONS into;

3.2 Interface
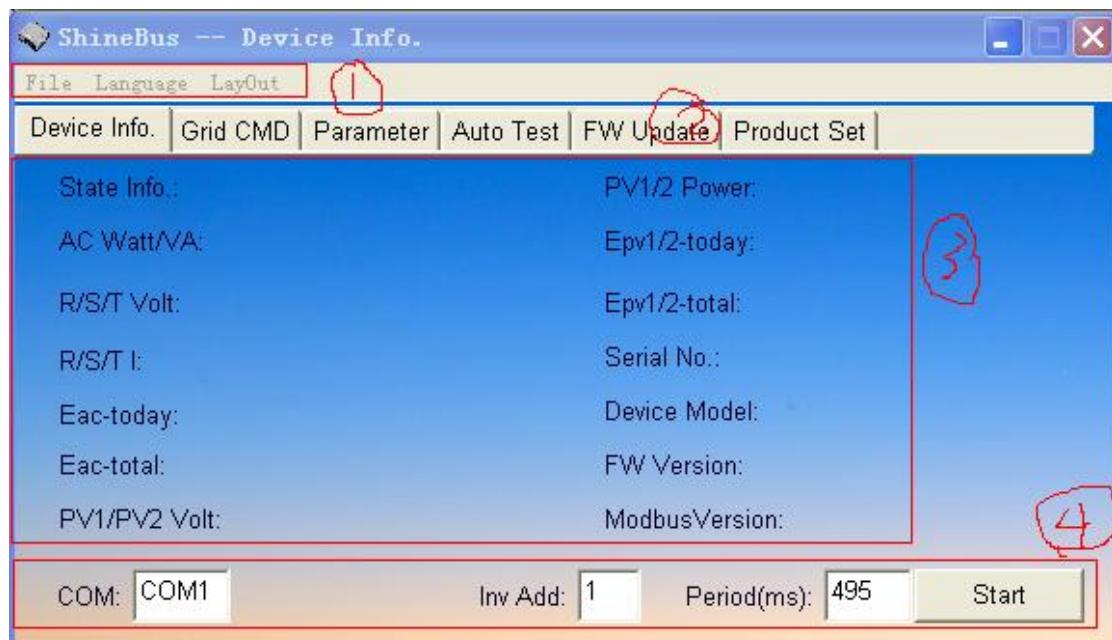
(1) the menu area: software menu;

(2) the function zoning: software operating function switching area;

(3) operation information area: software function information area;

(4) the operating configuration area: software configuration area;

3.3 Menu area

Software menu area used to check software information and configuration software language;

    3.3.1 Flie: software information menu;

    - About: into the software to help interface, check software version information and software to help;

    - Exit: Exit software;

    3.3.2 Language: setting software Language

-English：English;
-Deutsch：German;
-Italiano：Italian;

3.4 Function zoning

Function zoning for switching software functions;

- 1 Device Info. : read the photovoltaic inverter basic information and working data;

- 2 Grid CMD: set up photovoltaic inverter power Grid information;

- 3 Parameter: read or set up photovoltaic inverter basic Parameter;

- 4 Auto Test: CEI0-21 regulations automatic Test supporting display storage function;

- 5 FW Update: upgrade photovoltaic inverter firmware;

- 6 Product Set: Set up photovoltaic inverter module information;

3.5 Operation information area

Operation information area is the function of the information display or input area;

3.6 Operation distribution of regional

Operating configuration software communication area is the basic configuration area;

- COM: software communication using RS232 port name configurations. The default is COM1, users
  according to their actual situation of computer configurations.

- Password: reserve; For configuration, the function such as upgrades to reserve;

  Fox Inv Addr: photovoltaic inverter communication address; The default is 1, users according to their
  own inverter actual Settings with configuration; Usually 1-250;

- Period (ms) : read-write operation operation cycle, the unit is millisecond; The default 495 milliseconds;
  Users according to their own needs for configuration, suggest not less than 200;

- Button: used to start or stop each function; When switching function, the original operation will
  automatically stop; Therefore in the inverter firmware upgrade don't function switching operation;

- Software all functions are based on the operating configuration;

3.7 Help group interface is introduced

In the software interface click "File - > Abou" t or task bar right choice "About (A)..." Into the software to help interface, Help interface display software version and software use note.
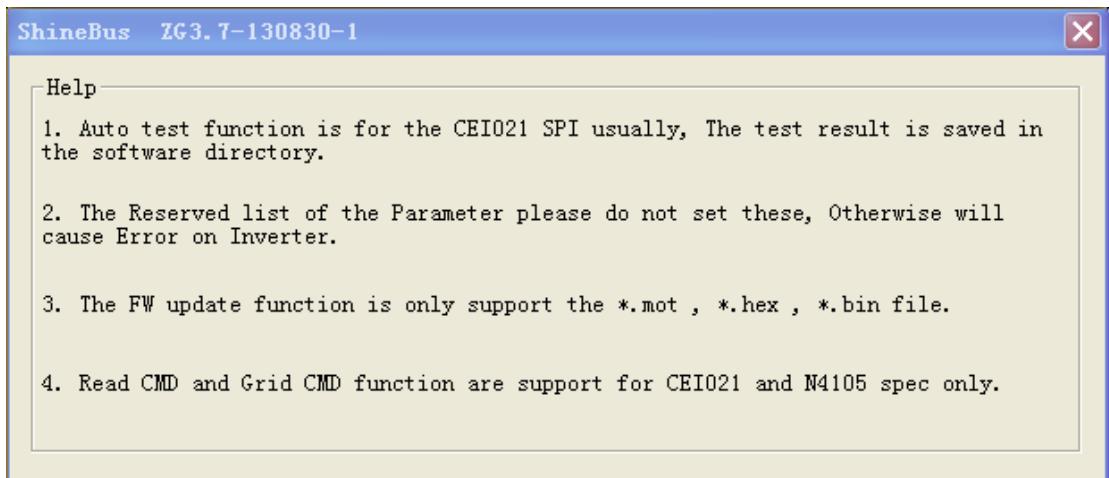
3.7.1 Track software version number;

- software version complete format: ZGx. X - XXXXXX-x,

    eg: ZG2.7-121112-1:

ZG2.7: software main version number; Upgrade version number increasing;

121112: this version of the software release date date;

1: software this version number; Upgrade version number increasing;

- software use the matters needing attention

Here are some of the function of software in the matters needing attention, and the specific please refer to the manual;

4. Function instructions

4.1 Communication function

- use RS232 communication cable will inverter and computer connection;

- start photovoltaic inverter, check inverter communication address; Methods reference inverter using manual;

With reference to section 3.6 - configuration operation information area, namely setting serial number and inverter communication address;

- switching software to demand function interface, such as for setting function, first choice set items and input set value;

- part function need to input operation password (no, reserve);

- click on the lower right corner button to begin operation;

- waiting for the operation results;

4.2 Device Info.

Device Info. Function used to read the photovoltaic inverter basic information and working data;
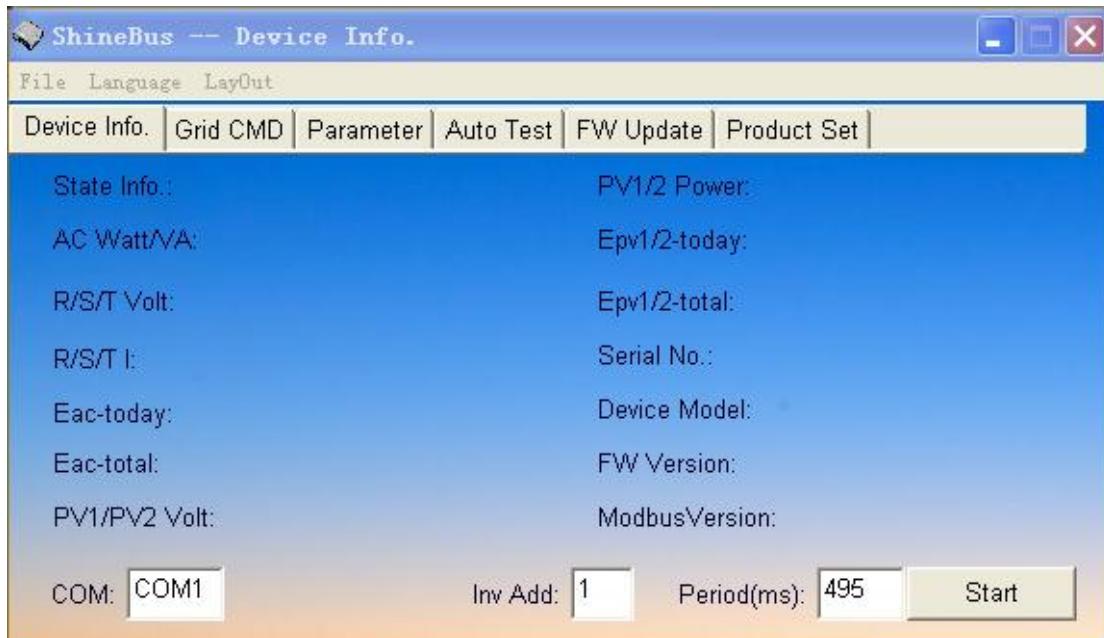
Specific functions are as follows:

Display item	Function declaration
Status Info.	Working status;
AC Watt/VA	Output Active power/ apparent power
R/S/T Volt	Grid R/S/T phase voltage
R/S/T I	Output R/S/T current
Eac-today	Energy that generated today
Eac-total	Energy that generated totally
PV1/PV2 Volt	Input PV1 PV2 voltage
PV1/2 Power	Input PV1 PV2 power
Epv1/2-today	Energy that generated by pv1/pv2 today
Epv1/2-total	Energy that generated by pv1/pa2 totally
Serial No.	Inverter Serial No.
Device Mode	Inverter mode
FW Version	Firmware version and Build version
ModbusVersion	Modbus protocol Version

4.3 Gred CMD

Grid CMD function used for setting pv inverter power Grid information;
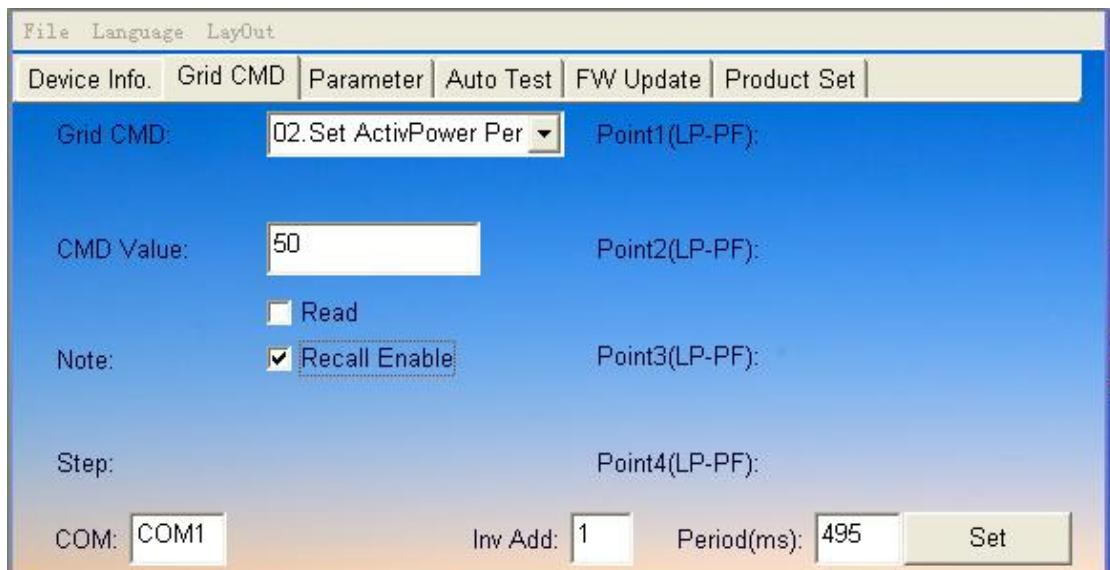
4.3.1 Collocation method

A) in the GridCMD list choose configuration items;

B) in the CMD Value of input set Value;

C) have records of the option whether you choose to record configurations.

D) click on the button to set, check results;

-AutostatartEanble description: here Autostart configuration for can or prohibit the next power on whether to be automatic output;

-Recall Enable description: setting the setting is recorded, that is set in the next time whether to continue after the power is effective;

4.3.2 Specific function

Set term	Function declaration	* Common value
01.On/Off Inv	Inverter power on/off	1,0
02.Set ActivPower Per	Set active power percent	0-100
03.Run PF is 1	Run at the mode of PF=1	
04.Set UnderEx PF	Set under excited PF	0.0-1.0
05.Set OverEx PF	Set over excited PF	0.0-1.0

06.Default PF line	Set the mode as default PF line	
07.User PF line	Set the mode as user PF line	**
08.Set UnderEx ReactivPow	Set under excited reactive power percent	0-100
09.Set OverEx ReactivPower	Set over excited reactive power percent	0-100
10.Enable SPI	Enable or disable SPI	1,0
11.Enable LVFRT	Enable or disable LVFRT	1,0
12.Set FL Rate	Set the rate of deloading when over frequency	20-50
13.Local Test	Using for changing and imitating the frequency range of CEI	1: Narrow Ena 0: Narrow Dis
15. 6kW System	Set if the total system volume is more than 6KW	0 : below 6 kW, 1 : over 6 kW
16.ReactiveRate	Reserved	
17. Enable FrqLoad	Enable the function of deloading when over frequency	1,0
18.PF Line In Vac	Set the lock-in volt of PF line	0-500
19.PF Line Out Vac	Set the lock-out volt of PF line	0-500
20.Q(v) In P(%)	Set the lock-in power of Q(v) mode	0-100
21.Q(v) Out P(%)	Set the lock-out power of Q(v) mode	0-100
22.Q(v) V1S	Set the lock-in volt of Q(v) mode	0-500
23.Q(v) V2S	Set the lock-out volt of Q(v) mode	0-500
24.Q(v) V1L	Set the lock-in volt of Q(v) mode	0-500
25.Q(v) V2L	Set the lock-out volt of Q(v) mode	0-500
26.LVFRT_LV1	Set the LVFRT lost low volt 1	0-500
27.LVFRT_LT1	Set the LVFRT lost time of low volt 1	0-200
28.LVFRT_LV2	Set the LVFRT lost low volt 2	0-500
29.LVFRT_LT2	Set the LVFRT lost time of low volt 2	0-200
30.LVFRT_LV3	Set the LVFRT lost low volt 4	0-500
31.LVFRT_LT3	Set the LVFRT lost time of low volt 3	0-200
32.LVFRT_LV4	Set the LVFRT lost low volt 4	0-500
33.LVFRT_LT4	Set the LVFRT lost time of low volt 4	0-200
34.LVFRT_HV1	Set the LVFRT lost high volt 1	0-500
35.LVFRT_HT1	Set the LVFRT lost time of high volt 1	0-200
36.FreDeratStart	Set the AC frequency point when Start derating	
37.LoadSpeed	Set the laod speed	
38.Run Q(v) Model	Set the Q(V) model	
39.JP Fac Low	The lower limit of AC frequency for selling Japan	
40.JP Fac High	The higher limit of AC frequency for selling Japan	

* : this common value is application software limit range, specific restrictions by inverter and adapt to the regulations decision;

* * : User PF line configuration items input explanation:
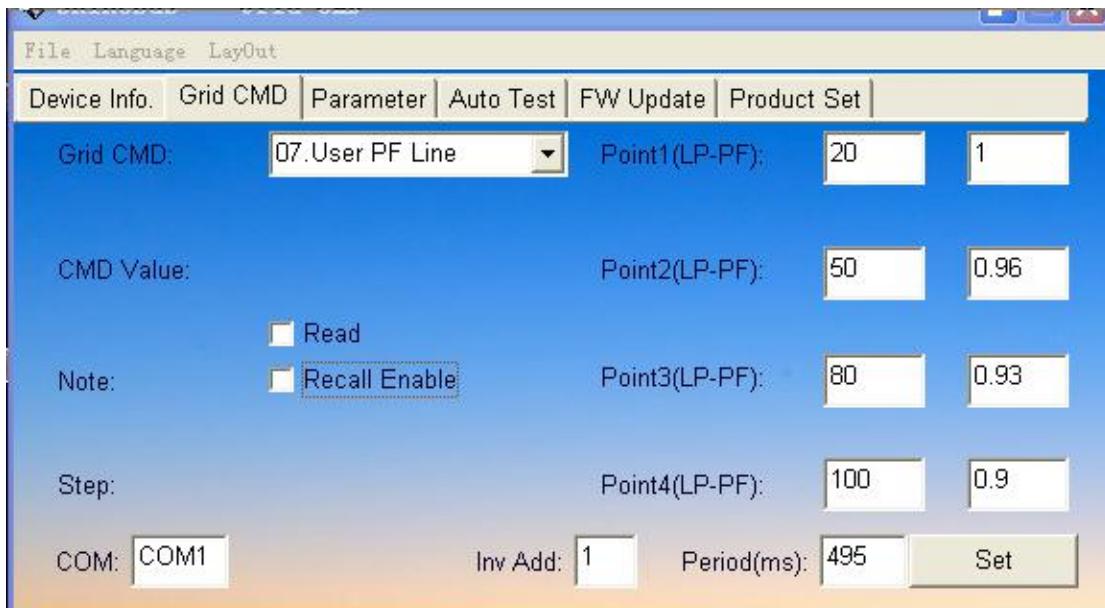
- curve of dots, AcitivePowerpercent - PowerFactor;

-Most had curve defined four point, at least two;

- AcitivePowerpercent increasing, the last one must be 100%;

-Fox PF contains UnderEx, OverEx; UnderEx input negative, OverEx input positive;

4.3.3 Common mistakes

Error code	Error description	Exclusion
Input Data Error	Input data type or value wrong	Check the input data
Unlock inverter fail	For some old inverter need to unlock first, but the spec password was changed by user; the software unlock inverter use default XXXXXX	Call the Customer service
Set data fail; Set Recall Fail; Set PF Mode Fail;	Set the data fail	1,the data outrange; 2,the inverter does not support this setting;

4.4 Parameter

Parameter is used to read or set up photovoltaic inverter basic Parameter;
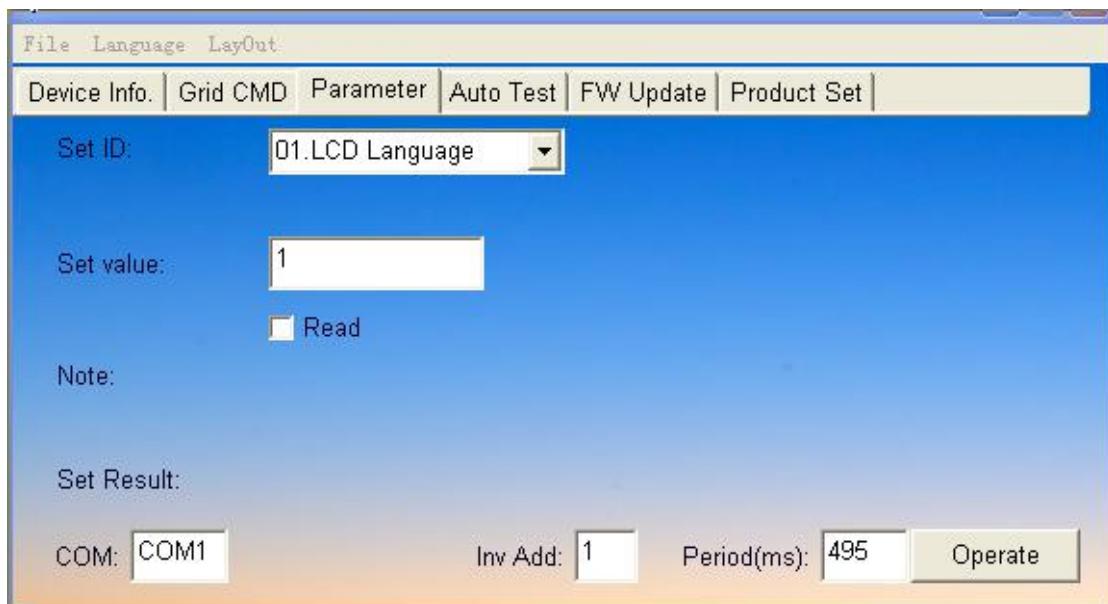
4.4.1 Reading and writing parameter method

A) Set ID list in a choice, speaking, reading and writing;

B) Set please in the Set Value of input Set Value;

C) Read the Note please select the Read and write operations to ignore this operation;

D) click on the button to start reading and writing, and wait for the results;

4.4.2 Specific function

Set term	Function declaration	* Common value
01.LCD Language	The display language of LCD	**
02.COM Addr	Communication address	1-250
03.LCD Contrast	The contrast ration of LCD	0-5
04.Clear History	Clear totally Eac and Epv history	1
05.Date And Time	Date and time	pc
06.Vpv start	The starting voltage of PV (v)	50-1000
07.Time start	Time for starting the machine (second)	30-600
08.Time restart	Time for restarting the machine (second)	30-600
09.Connect Vac Low	The lower limit of AC voltage permitted to connect the grid (V)	150-300
10.Connect Vac High	The higher limit of AC voltage permitted to connect the grid (V)	200-300
11.Connect Fac Low	The lower limit of AC frequency permitted to connect the	45-60

	grid (Hz)	
12.Connect Fac High	The higher limit of AC frequency permitted to connect the grid (Hz)	50-65
13.R1 Vac Low	The lower limit of AC voltage of range 1 (V)	150-300
14.R1 Vac high	The higher limit of AC voltage of range 1 (V)	200-300
15.R1 Fac Low	The lower limit of AC frequency of range 1 (Hz)	45-60
16.R1 Fac High	The higher limit of AC frequency of range 1 (Hz)	50-65
17.R2 Vac Low	The lower limit of AC voltage of range2 (V)	50-200
18.R2 Vac high	The higher limit of AC voltage of range 2 (V)	200-330
19.R2 Fac Low	The lower limit of AC frequency of range 2 (Hz)	45-60
20.R2 Fac High	The higher limit of AC frequency of range 2 (Hz)	50-65
21.Vac 10min Avg	The average AC voltage limit during last 10mins (V)	200-350
22.R1 Vac Low Time	The limit time of AC low voltage for range 1 (cycle)	1-250
23.R1 Vac High Time	The limit time of AC high voltage for range 1 (cycle)	1-250
24.R1 Fac Low Time	The limit time of AC low frequency for range 1 (cycle)	1-250
25.R1 Fac High Time	The limit time of AC high frequency for range 1 (cycle)	1-250
26.R2 Vac Low Time	The limit time of AC low voltage for range 1 (cycle)	1-250
27.R2 Vac High Time	The limit time of AC high voltage for range 1 (cycle)	1-250
28.R2 Fac Low Time	The limit time of AC low frequency for range 1 (cycle)	1-250
29.R2 Fac High Time	The limit time of AC high frequency for range 1 (cycle)	1-250
30.Enable Neutral	Set the neutral wire enable	0 or 1
31.ChangeTotal Energy	Set the total energe	0-999Mwh

* : this common value is application software limit range, specific restrictions by inverter and adapt to the regulations decision;

**：The display language of LCD

　　0: Italian；

　　1: English

　　2: German

　　3: Spanish

　　4: French

　　5: Simplified Chinese (Inverter for China)

4.4.3 Common mistakes

Error code	Error description	Exclusion
Set Value Outrange	Input data value outrange of the APP limit	Check the input data value
Set data fail	Set the data fail	1,the data outrange; 2,the inverter does not support this setting;
Read Fail	Read data fail	Check the communication setting

4.5 Auto Test

Auto Test is used to CEI0-21 regulations automatic Test supporting display storage function

- usually only applicable to the Italian market inverter;

- in the inverter in Normal state at the start of the test;

- test record stored in software path: AutoTest report of xx.txt file;

Specific function as follow:

Display item	Function declaration
SerNo.	Inverter S/N
Mode	Inverter mode
FWversion	Inverter firmware version
TestStatus	Test status
TestStep	Test step
LimitValue	Step limit by spec
Real-Test	The real value and the testing value
TripValue	The trip value of the step test result

4.6 FW Update

FW Update function used to Update photovoltaic inverter firmware. At present support *. mot, *. hex, *. bin three the firmware file, update the firmware before please confirm and manufacturers file types and versions;

4.6.1 Firmware update steps

A) refer to 3.6 and 4.1 section configuration communication;

B) click "Brose" browse the firmware file;

C) click "Update" began to Update, wait for the results

D) failure repetitive operation last step;

4.6.2 Common mistakes

Error code	Error description	Exclusion
System Not ready	Inverter system not ready	1,check the comm. Setting 2,check the inverter is power on or not;
Erase Fail	Inverter Erase Flash fail	Retry or call service
System Return Error	Inverter system operate fail	Retry or call service
Tx File Fail	Update stopped	Check the comm. is stable, Retry
Sun Check Fail	Update check fail	Check the comm. is stable, Retry
End Fail	End the update fail	Check the comm. is stable, Retry
Read FW File Fail	Read firmware data fail	Check the firmware file

4.7 Product Set

Product Set function used for setting of inverter Mode and serial number (used);

4.7.1 Setting step

A) input Mode or serial number, the concrete content by manufacturers to provide;

B) click on the button to set, waiting for results;
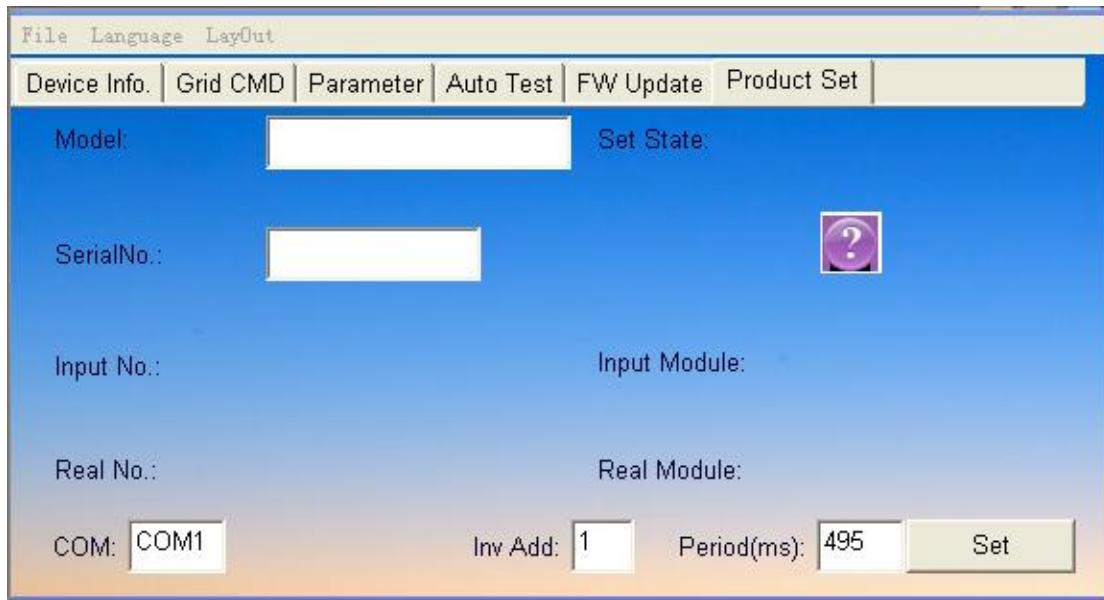
4.7.2 Common mistakes

Error code	Error description	Exclusion
Mode Type Wrong	Input mode type wrong	Check the mode input
Mode Set Fail	Set mode fail	Check the mode input, disconnect AC to retry;
Mode Check Fail	Check the mode set fail	Retry
No. Too Long	S/N to long, more than 10 chars	Check the S/N input
No. Set Fail	Set S/N fail	Check the S/N input
No. Check Fail	Check the S/N set fail	Retry

4.8 LayOut

Click the menu ->Layout to go to Grid setting layout panel; It is for the load, save and print functions.

4.8.1VDE AR-N 4105

A):Functions

Function	Function description	Exclusion
Read	Read the grid setting from inverter	
Load	Load the grid setting from date file	*.dat file type
Save	Save the grid setting to date file	*.dat file type
Save As	Save as the grid setting to date file	*.dat file type
Print	Print the grid setting and the project info.	
Fresh	Fresh the PF line after the editing of the PF point which is P1, P2, P3, P4;	
Write	Set the grid setting	

B): The project information:

Inverter	description	Exclusion
Project name	The PV project name	Input or load
Serial number	The SN. Of the inverter	Read, Input or load
Address/Port	The inverter address and the comport name of the computer which com with the inverter	Read, Input or load

C):Other parameters please refer to the "Grid CMD" function.

D):Print sample

Growatt　　　　　　　　Project Layout

Inverter
Project name:　　　　Demo
Serial number:
Address/Port:　　　　1 / RS232-COM1

Settings for the NA-Protection
SPI Enable Status:　　　　　　　　　Disable
Fac Narrow Enable Status:　　　　　　Disable

Switch-Off limits:　　　　　　　Value　Timeout(ms)
Voltage decrease protection (U<)(V):
Voltage rise protection (U>)(V):

Voltage rise protection (U>>)(V):
Frequency decrease protection (f<)(Hz):
Frequency increase protection (f>)(Hz):

Restart limits:
Voltage (V):　　　　　　　　　more than　　　　and less than
Frequency(Hz):　　　　　　　　more than　　　　and less than

Active power settings
Active power settings:　　　　　%　; 0.00kW

Reactive power settings
- 6kW System
- Fixed reactive power Percent(%)　　　　　　　30　; underexcited
- PF as a fixed value from P/Pmax (linear):　　　1　; underexcited
- Q(v) model　　　Q(v) In P(%):　　　Q(v) Out P(%):
　　　　　　　　Q(v) V1S (V):　　　Q(v) V2S (V):
　　　　　　　　Q(v) V1L (V):　　　Q(v) V2L (V):
- PF - P/Pmax(%) curve:
  - Standard VDE AR-N 4105 charcteristic curve
  - User define charcteristic curve:
    Curve lock in Vac(V):　　　　Curve lock out Vac(V):

	P/Pmax		PF		
P1:	P/Pmax =	1 %	PF =	1	; underexcited
P2:	P/Pmax =	20 %	PF =	1	; underexcited
P3:	P/Pmax =	50 %	PF =	1	; underexcited
P4:	P/Pmax =	100 %	PF =	0.9 0.95	; underexcited

Locus, date, created, stamp, verifies:

4.8.2 CEI 0-21

A):Functions

Function	Function description	Exclusion
Read	Read the grid setting from inverter	
Load	Load the grid setting from date file	*.dat file type
Save	Save the grid setting to date file	*.dat file type
Save As	Save as the grid setting to date file	*.dat file type
Print	Print the grid setting and the project info.	
Fresh	Fresh the PF line after the editing of the PF point which is P1, P2, P3, P4;	

B): The project information:

Inverter	description	Exclusion
Project name	The PV project name	Input or load
Serial number	The SN. Of the inverter	Read, Input or load
Address/Port	The inverter address and the comport name of the computer which com with the inverter	Read, Input or load

C):Other parameters please refer to the "Grid CMD" function.

D):Print sample

5. Common problem

1, problem: can't and inverter communication

   Processing: check communication configuration, connection, etc.;

2, problem: unable to set parameters

   Processing: check whether the parameter value with inverter with manual instructions;

3, problem: the firmware update is always fail

   Processing: check the communication line stability, replace the high quality communication try again;