User Manual

WatchPower

Management Software for Inverter

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1. WatchPower Overview

1.1. Introduction

WatchPower is an inverter monitoring software which can monitor multiple devices via serial port at the same time. The major functions of WatchPower monitoring software include data log for devices, alarm messages, fault messages, and parameter setting for devices.

1.2. Features

- Automatic and real-time data acquisition of devices and secured data log saving
- Graphic display of device data for quick and easy reading
- Warning notifications or fault alarms via mobile messenger, tray message and e-mail
- Easy diagnosis from event statistics
- Supports online upgrade and manually upgrade

2. WatchPower Install and Uninstall

2.1. System Requirement

- 512 MB physical memory at least (1 GB is recommended)
- 2GB hard disk space at least
- Administrator authority is required
- More than 32-bit colors and 1280 x 800 or above resolution display is recommended
- An available communication port is needed
- Platforms supported by software are listed below:
 - Windows XP/2000/2003/Vista/2008 (32-bit & 64-bit)
 - Windows 7/8 (32-bit & 64-bit)
 - Windows SBS 2011
 - Linux RedHat 8, 9
 - Linux RedHat Enterprise AS3, AS5, AS6 (32-bit)
 - Linux RedHat Enterprise AS6 (64-bit)
 - Linux RedHat Enterprise 5.2 (32-bit & 64-bit)
 - Linux SUSE 10 (32-bit & 64-bit)
 - Linux Cent OS 5.4 (32-bit)
 - Linux Ubuntu 8.X, 9.X, 10.X (32-bit)
 - Linux Ubuntu 10.X (64-bit)
 - Linux Ubuntu 12.04 (32-bit & 64-bit)
 - Linux Fedora 5
 - Linux OpenSUSE 11.2 (32-bit & 64-bit)
 - Linux Debian 5.x, 6.x (32-bit)
 - Linux Debian 6.x (64-bit)

2.2. Software Install

Step 1 After clicking install, it will display the installation in process. Refer to the diagram 2-1.

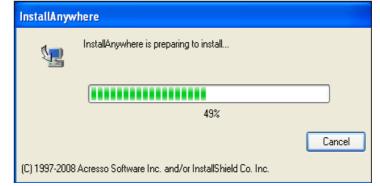


Diagram 2-1

Step 2 Choose wanted language and click "OK" as diagram 2-2.



Diagram 2-2

Step 3 Click "Next" to proceed to the next screen as Diagram 2-3.

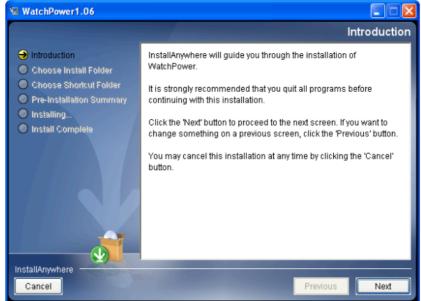


Diagram 2-3

Step 4 Click "Choose" button to change the default folder. After choosing the installed folder, click "Next" button. Refer to the following diagram 2-4.

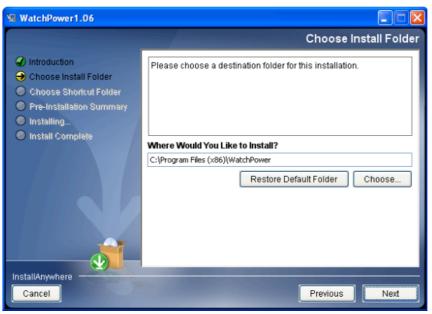


Diagram 2-4

Step 5 Choose the shortcut folder and click "Next" button. Refer to the following diagram 2-5.

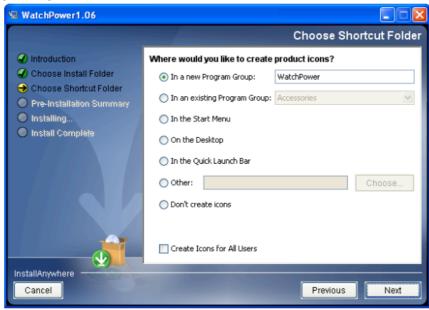


Diagram 2-5

Step 6 It will display the software summary before installation. Click "Install" button to start the installation and refer to Diagram 2-6.

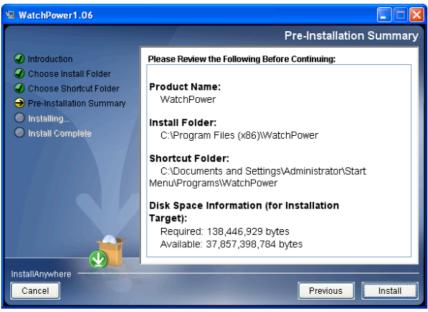


Diagram 2-6

Step 7 Installation is processing. Refer to Diagram 2-7.

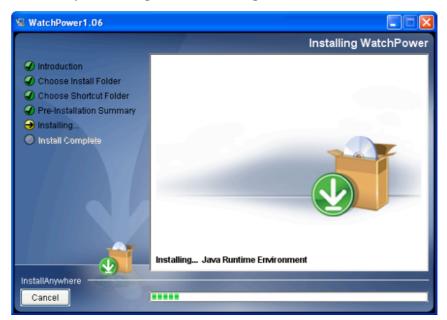


Diagram 2-7

Step 8 Click "Done" button to confirm the installation completely. Refer to Diagram 2-8.

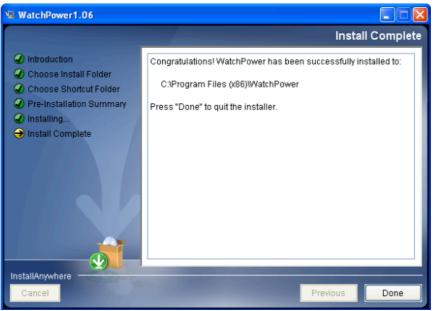


Diagram 2-8

Note: Please uninstall the previous version before installing the new version software.

2.3. Software Uninstall

Please choose Start >> All Programs >> WatchPower >> Uninstall. Then, follow the on-screen instruction to uninstall the software.

Note: Before uninstalling software, you must stop all software programs first and log in as "Administrator"! Otherwise, it can't be uninstalled completely.

3. Tray Application

3.1. Startup

The Installer will leave a shortcut icon called "WatchPower" on your desktop. Refer to Diagram 3-1. Simply double click the shortcut icon. Then, it will start the software and display a service icon located in tray. It will pop up function menu by clicking right button of the mouse. Refer to below diagram 3-2.



Diagram 3-2

3.2. Configuration

3.2.1. Software Upgrades

Refer to Diagram 3-3 for the detailed configuration for online upgrade:

- Specify the URL for update files: This is the directory to online update software. Please do not change it unless it's instructed by software manufacturer.
- Save files to: The directory to save files in your hard drive.
- Online auto-update: If selected, it will automatically check if there is any new version launched online every 1 hour.
- If applying online upgrade, please follow below for configuration:
 - 1. Select "Apply the proxy configuration".
 - 2. Enter IP address and port of server.
 - 3. If ID identification is requested, select "Enable authentication" and enter User Name and Password.
- Connection test: Click this button to test if all configurations are set up well.

🕺 configuration		🔀
Specify the URL for update files	-download.com/WatchPower/updatewindows.zip	
Save files to	C:\Program Files\WatchPower1.00\UpgradeFiles	Browse
🔽 Online auto-update		
Apply the proxy configuration		
IP		
Pori		
Enable authentication		
User name		
Password		
Connection test		
		Apply Close

Diagram 3-3

3.2.2. Configuration Saved

Click "Apply" button to save all changes in Configuration page. Click "Cancel" to stop the change.

3.3. Software Upgrade

Software upgrades includes online upgrade and manually upgrade.

 Online Upgrade: Click "Online Upgrade" to search the latest software version. If there is new version, it will automatically download and upgrade. Refer to Diagram 3-4.

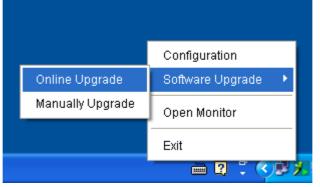


Diagram 3-4

• Manually Upgrade:

Users can manually upgrade the software. Follow below steps:

1. Click "Manually Upgrade" from function menu. Refer to Diagram 3-5.

		Configuration
Onli	ne Upgrade	Software Upgrade 🔹 🕨
Man	ually Upgrade	Open Monitor
		Exit
		─────── ────────

Diagram 3-5

2. Click "Browse" to choose file directory. Then, click "Upgrade" to upgrade software. Refer to Diagram 3-6.

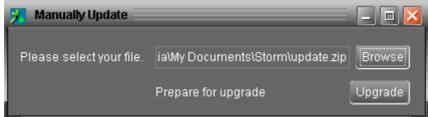


Diagram 3-6

3.4. Icon and Software Status

- Connecting devices: 🗾 and 🗾 will rotate as an animation
- When receiving event message with devices connected: will flash for reminder
- When receiving event message without devices connected: will flash for reminder

3.5. Message Board

Users can check message board for event list. Refer to Diagram 3-7:



Diagram 3-7

3.6. Exit

Click "Exit" to exist service application.

4. GUI Interface

View Language Help 🛛 🗛 D an-zhaoyou-nb.vcn.vol.corp COM4_76543210987654 AC voltage Output voltage Е 0.0 Hz 50.0 Hz С • Model type: Stand alone 50.0 H; nal output voltage 4000.0 V

There are five sections in GUI interface as marked in the illustration below:

Diagram 4-1

A. Function Menu offers complete tool-set for navigating and setting the GUI.

B. Shortcut Menu provides short cuts to more commonly used functions.

C. Inverter Navigation indicates all devices.

D. Current Monitoring Information displays User ID, monitored inverter ID.

E. Main Window displays power flow, operation information, device information and rated information of current monitored inverter. Refer to Diagram 4-2.

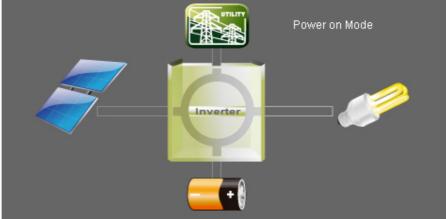
						_			🗉 🔀
View Language Help									
Guest Monitored device: C	COM4_09876543210987	654							
			-Basic information	1					
	Batt	ery Mode		AC voltage:			Output voltage		
			A A	C frequency:			Output frequency		
🥏 1				nput voltage:			Output apparent powe		
	Inverter		Ba	attery voltage:	50.6		Output active power		
	Y		Bat	tery capacity:					
	<u> </u>		Battery Disch:	arge Current:					
			•			Ш			
Product Information		Rated inf	ormation						
	Stand alone	Rated inf				Norr	ninal output frequency:		
Model type:	Stand alone transformerless	Rated inf	ormation	230.0 V 21.7 A			ninal output frequency: Iominal output current:	50.0	
Model type:	transformerless	Rated inf	ormation ninal AC voltage:						
Model type: Topology:	transformerless 00012.27	Rated inf	ormation minal AC voltage: minal AC current:	21.7 A			lominal output current:	21.7	
Model type: Topology: Main CPU version:	transformerless 00012.27	Rated inf	ormation minal AC voltage: minal AC current: d battery voltage:	21.7 A 48.0 V			lominal output current: utput apparent power:	21.7 5000.0	
Model type: Topology: Main CPU version:	transformerless 00012.27	Rated inf	ormation minal AC voltage: minal AC current: d battery voltage:	21.7 A 48.0 V			lominal output current: utput apparent power:	21.7 5000.0	
Model type: Topology: Main CPU version:	transformerless 00012.27	Rated inf	ormation minal AC voltage: minal AC current: d battery voltage:	21.7 A 48.0 V			lominal output current: utput apparent power:	21.7 5000.0	
Model type: Topology: Main CPU version:	transformerless 00012.27	Rated inf	ormation minal AC voltage: minal AC current: d battery voltage:	21.7 A 48.0 V			lominal output current: utput apparent power:	21.7 5000.0	
		Guest Monitored device: COM4_09976543210987	Cuest Monitored device: COM4_09976543210997654	Cuest Monitored device: COM4_D9976543210997654 Battery Mode PVI Battery Mode Battery Discher	Ouest Monitored device: COM4_09876543210987654 Image: Comparison of the second device of the seco	Ouest Monitored device: COM4_09876543210987654 Image: Comparison of the second secon	Ouest Monitored device: COM4_09876543210987654 Image: Comparison of the strength of the strengt of the strength of the strength of the streng	Guest Monitored device: COM4_09876543210987654 Image: Discrete device: D	View Language Help Guest Monitored device: COM4_09876543210987654 Basic information AC voltage: 0.0 V Output voltage: 237 AC frequency: 0.0 Hz Output voltage: 237 AC frequency: 0.0 Hz Output requency: 56 PV input voltage: 50.6 V Output active power: 33 Battery capacity: 0 % Load percent: 34 Battery Discharge Current: 0 A 44 44

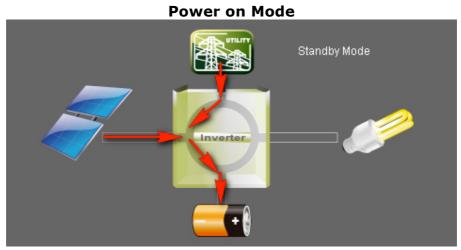
Diagram 4-2

1. Power flow:

There are five device icons: solar panel, battery, inverter, load and the utility. It displays dynamic power flow with these five device icons.

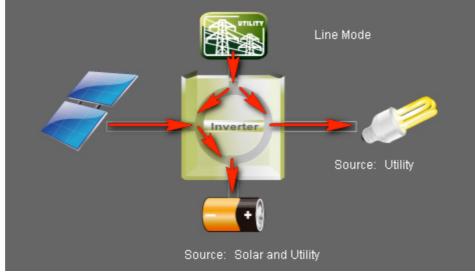
Power on and Standby mode: Inverter won't power the load until "ON" switch is pressed. Qualified utility or PV source can charge battery in standby mode.





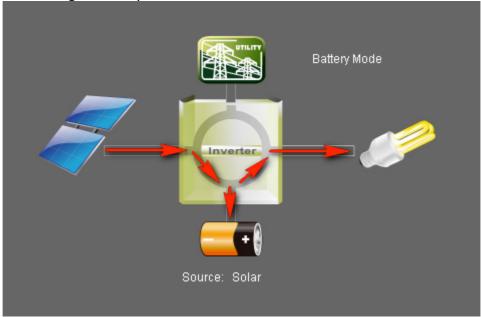
Standby Mode

Line mode: Inverter will power the load from utility. Qualified utility or PV source can charge battery.



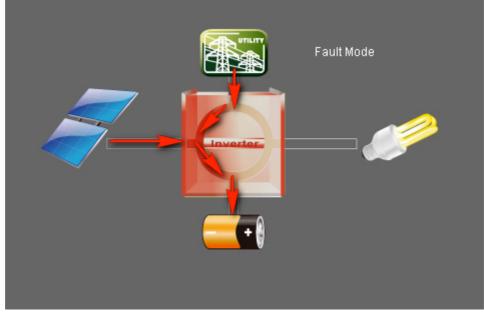
Line Mode

Battery mode: Inverter will power the load from battery or PV panel. Only PV source can charge battery.



Battery Mode

Fault mode: Some faults occurred in inverter and no power output is generated from inverter. Qualified utility or PV source still can charge battery.



Fault Mode

2. Basic Information:

It displays information of AC voltage, AC frequency, PV input voltage, Battery voltage, Battery capacity, Charging current, Output voltage, Output frequency, Output apparent power, Output active power and Load percent.

3. Product information:

Product information displays Mode type, Topology, Main CPU version and Secondary CPU version.

4. Rated information:

Rated information displays information of Nominal AC voltage, Nominal AC current,

Rated battery voltage, Nominal output voltage, Nominal output frequency, Nominal output current, Nominal output apparent power and Nominal output active power.

4.1. WatchPower Configuration

4.1.1. Basic

It is to set up parameters for display. Select WatchPower Configuration>>Basic. Refer to Diagram 4-3.

Basic			
Page refresh interval:	2	Sec.	
Device scan interval:	5 🌲	Sec.	
Record interval:	60 🌲	Sec.	
Date format:	YYYY-MM-D	D 🔻	
			Apply Close

Diagram 4-3

- 1. Page refresh interval: This interval time will determine how long the web page is refreshed. Setting range is from 5 to 600 seconds. The default setting is 5 seconds.
- 2. Devices scan interval: This interval time will determine how long to scan connected devices. The setting range is from 5 to 600 seconds. The default setting is 5 seconds.
- 3. Record interval: This interval time will determine how long to record monitoring data of inverters into database. The setting range is from 30 to 600 seconds. The difference between each option is 30 seconds. The default setting is 60 seconds.
- Date format: This system supports 4 different formats, "YYYY-MM-DD", "YYYY/MM/DD", "MM-DD-YYYY" and "MM/DD/YYYY". The default setting is "YYYY-MM-DD".

If any change is made, simply click "Apply" button. Then, the setting will be saved.

4.1.2. Password

It's password configuration for administrator only. Before operating and configuring the software, please login first and modify the password. The default password is "**administrator**" at first log in. Users can only browse inverter status and information as Guest without login as an Administrator. A guest can not control or execute any setting.

Step 1 Select WatchPower Configuration>>Password. Refer to Diagram 4-4.

Password		
	Password	
		1
Old password:	•••••	
New password:	•••••	
Confirm password:	•••••	
	Apply Clear	

Diagram 4-4

Step 2 Enter old password, new password and re-type new password to confirm new password. The new password should be at least 6 digits. Then, click "Apply" button to successfully modify password for administrator.

NOTE1: Simply click "Login" button on the top right corner to log in the software. **NOTE2:** If password is forgotten, it's necessary to re-install the software.

4.1.3. SMS Setting

It's to enter SMS receiver list. In the event of an alarm occurring, a message about inverter status will be sent to the specified users via mobile phone. For the event receiving list, please configure in "Event Action" page (refer to section 4.1.5).

SMS Setting		_	X
	Com. port setting		
Com. port:	сомз 🖵		

Step 1 Choose WatchPower Configuration >> SMS Setting. Refer to Diagram 4-5.

Com. port:	СОМЗ	-
Baud rate:	1200	*
Receivers list:	12345677788	12345677788 Add Delete
Note: •	Click "Test" button to chee	kif the transmission is successfully
	Test	
		Apply Close

Diagram 4-5

- **Step 2** Select communication port and baud rate.
- Step 3 Enter mobile phone numbers in "Phone no." column and click "Add" button to

add phone no. in Receivers List. To delete numbers, simply select phone no. from "Receivers list" and click "Delete".

Step 4 Click "Apply" button to save all changes. The "Test" button can be used to send a test SMS to make sure all setting is correct. If all parameters are set up correctly, system will send a test message to all receivers and pop up a successful message. (Refer to Diagram 4-6) Otherwise, it will pop up a failure dialog to indicate there is an error for parameter setting. (Refer to Diagram 4-7)

SMS Setting	
	Com. port setting
Com. port:	СОМЗ
Baud rate:	9600 - State
Receivers list:	
Note:	Click "Test" button to checkif the transmission is successfully Test
	Apply Close

Diagram 4-6

SMS Setting		×
	Com. port setting	
Com. port:	СОМЗ	
Baud rate:		
Receivers list:	Test failed Delete	
Note:	Click "Test" button to checkif the transmission is successfully Test	
	Apply]

Diagram 4-7

NOTE: It's required to plug in a GSM modem if sending a SMS to mobile phone.

4.1.4. E-mail

This configuration is allowed to send an alarm mail from SMTP server. For the event receiving list, please configure in "Event Action" page (refer to section 4.1.5). To use this function, the e-mail service must be correctly configured in the computer. All columns in this function page are default empty. This action can't be executed without the SMTP information, e-mail account and password. Besides, the sender account should be allowed for SMTP/POP3 forwarding.

E-mail			
	SMTP server setting		
SMTP server:	smtp.test.com	Port:	25
	Exchange Server Apply		
Send from:	account@test.com		
User name:	account		
	Password Authentication needed		
Password:	•••••		
Receivers list:	test@test.com		
	test@test.com	Add	Delete
Note:	Click "Test" button to checkif the transm	ission is	s successfully
	Test		
			Apply Close

Step 1 Select WatchPower Configuration >> E-mail. Refer to Diagram 4-8.

Diagram 4-8

Step 2 Enter SMTP server, Port, Send from E-mail address, User name and password. Click checkbox if password authentication is needed to verify password. **NOTE:** If using Exchange Server for mailbox system, it's required to configure Exchange server domain name in SMTP server. Beside, please click checkbox of "Exchange server" and click "Apply" button.

- **Step 3** Enter receivers' e-mail accounts in E-mail column. Then, click "Add" to add into Receivers list. To delete e-mail account, simply select accounts from Receivers list and click "Delete" button.
- Step 4 Click "Apply" to save all changes. The "Test" button can be used to send a test e-mail to all receivers to confirm correct operation. When the test e-mails are successfully sent to specific recipients, it will pop up a successful message on operated personal computer. Otherwise, it will pop up a failure dialog to indicate there is an error for parameter setting.

4.1.5. Event action

It's to configure response actions for events. It provides four response actions after events occur.

1. Event record: It will record event to data log in software after events occur. This function is default selected.

2. Warning message(s): It will send event message to tray.

3. SMS: It will send event message to specific mobile phone numbers after events occur.

4. E-mail: It will send event e-mail to assigned e-mail accounts after events occur.

Step 1 Select WatchPower Configuration >> Event actions. Refer to Diagram 4-9.

Step 2 Select action methods by clicking checkbox.

Step 3 Click "Apply" button to save all configurations.

Event act	ion		_		
ID	Level	Event			
1001	Fault	Fan locked fault	-		
1002	Fault	Battery voltage high fault		Send by:	Event record
1003	Fault	Over load fault			Warning message(s)
2001	Fault	Bus Over			E-mail
2002	Fault	Bus Under			
2003	Fault	Bus Soft Fail			
2004	Warning	LINE_FAIL			
2005	Warning	OPVShort			
2006	Fault	Inverter voltage too low			
2007	Fault	Inverter voltage too high		2 2 2	Phone No.
2008	Fault	Over temperature			
2009	Warning	Fan locked alarm			
2010	Warning	Battery voltage high alarm			
2011	Warning	Battery low alarm			
2013	Warning	Battery under shutdown			
2014	Warning	Battery de-rating			
2015	Warning	Over load alarm			
2016	Warning	Eeprom fault			Apply Close
3001	Message	Communication restore	-		

Diagram 4-9

NOTE1: When modifying receiver list in SMS or e-mail pages, it's necessary to refresh event action page to reload the updated receiver list.

4.1.6. Com. port Plug And Play Setting

To real-time monitor inverter device, it will scan each com. port anytime. In this way, it will occupy communication ports. This function will release some communication ports which are not connected with devices. To avoid any improper operation, in-used communication ports will be displayed in disabled grey icons. Users can select "Allow scanned" to re-scan or "No scanning" to release communication ports based on requirements.

Step 1: Select WatchPower configuration>> Com. port plug and play setting. Refer to Diagram 4-10.



Diagram 4-10

Step 2: Click "Refresh" to reload the status of com. ports.

Step 3: Click "No scanning" to stop scanning on this com. port. Click "Allow scanned" to start scanning on this com. port.

4.1.7. Modbus Serial Setting

This function is to set Modbus communication port with PCs that connected to Modbus card via RS232/RS485 converter. The settings include Modbus port, Baud rate, data bit, stop bit, parity and each Device ID in Modbus network.

- **Step 1** Select WatchPower configuration>> Modbus serial setting. Refer to Diagram 4-11.
- **Step 2** Select Modbus port to connect PC.
- **Step 3** Select "Device ID" of connected inverter in Modbus network.
- **Step 4** Select "Baud rate" of com. port. The default setting is 19200.
- **Step 5** Modify "Data bit" of com. port. The default setting is 8.
- **Step 6** Modify "Stop bit" of com. port. The default setting is 1.

- Step 7 Modify "Parity". The default setting is NONE.
- Click "Apply" button to save all changes. Step 8

Modbus Serial Set	ting	
Modbus port	СОМЗ	 Refresh
Device ID	1	Apply
Baud rate	19200	-
Data Bit	8	-
Stop Bit	1	•
Parity	NONE	-

Diagram 4-11

- **NOTE1:** Click "Refresh" button to refresh the port list.
- **NOTE2:** WatchPower supports multiple com. ports in multiple Modbus networks.
- **NOTE3:** All configurations will be changed based on different port selection in Step
 - 2.
- **NOTE4:** The default device ID of inverter is 1.
- **NOTE5:** If none of device ID is selected, it will be identified as not connecting with any Modbus network.
- **NOTE6:** If monitoring multiple Modbus networks, please repeat from step 2 to step 7 to set all ports.

4.2. **Device control**

4.2.1. Parameter Setting

This page is to activate some features and set up parameters for inverters.

Select Device Control >> Parameter Setting or select shortcut icon Diagram 4-12.

Parameters setting			
Buzzer alarm: 💿 Enable 🔿 Disable 🛕	Beeps while primary	v source interrupt: 💿 Enable 🕴	O Disable Apply
Power saving mode: 💿 Enable 🔿 Disable 🗛 Apply		Overload bypass: 💿 Enable 🕴	O Disable Apply
Backlight: 💿 Enable 🔿 Disable 🗚 🗛 🗛 🗛 🗛	LCD screen returns to default display so	reen after 1 min.: 🔘 Enable 🖠	O Disable Apply
Overload auto restart: 🔿 Enable 💿 Disable 🔥	Sola	ar power balance: 🌘 Enable 🕴	O Disable Apply
Over temperature auto restart: 🔘 Enable 💿 Disable Apply			
Charger source priority: Utility and Solar	Apply Output frequency:	50	Hz Apply
Output source priority: Utility	Apply Back to grid voltage:	46.0	V Apply
AC input range: Appliance	Apply Max. charging current:	100	- A Apply
Battery type: AGM	Apply Max. AC charging current:	60	A Apply
Output Mode: Single	Apply Back to discharge voltage:	54.0	V Apply
Bulk charging voltage(C.V. voltage): 56.4 📮 V 🗛 Apply		Battery cut-off voltage:	42 🗧 V Apply
Floating charging voltage: 54 📮 V Apply			
			Close

Diagram 4-12

NOTE: This screen may be different for different model of inverter.

- Step 1 Activate/Shut down functions by clicking "Enable" or "Disable" button. Some parameters are allowed to change the numbers by clicking up-down arrows or modify the numbers directly in the number column.
- **Step 2** Click "Apply" button to save the settings. Each function setting is saved by clicking each "Apply" button.
- Buzzer alarm: If disabled, buzzer won't be on when alarm/fault occurred. Vice versa.
- Power saving mode: If disabled, output will be on continuously when device is operated in battery mode. If enabled, inverter output will be on or off depending on connected loads detected or not. If the load is not detected, the output of inverter will be off until load reaches a certain level. Check product manual for more details.
- Backlight: If disabled, LCD backlight will be off when panel button is not operated for 1 minute. Vice versa.
- Overload auto restart: If disabled, the unit won't be restarted after overload occurs. Vice versa.
- Over temperature auto restart: If disabled, the unit won't be restarted after over-temperature fault is solved. Vice versa.
- Beeps while primary source interrupt: If enabled, buzzer will alarm when primary source is abnormal. Vice versa.

- Overload bypass: If enabled, unit will transfer to line mode when overload happened in battery mode. Vice versa.
- LCD screen returns to default display screen after 1 min.: If enable, LCD screen will return to default display screen after no button is pressed in one minute. Vice versa.
- Solar power balance: This function is only available for 4KVA/5KVA models. When enabled, solar input power will be automatically adjusted according to connected load power. If disabled, solar input power will be the same to max. battery charging power no matter how much loads are connected.

Parameters setting			
Buzzer alarm: 💿 Enable 🔘 Disable [Appl	/ Beeps while primar	y source interrupt: 💿 Enable	O Disable Apply
Power saving mode: O Enable O Disable Appl	/	Overload bypass: 💿 Enable	O Disable Apply
Backlight: 💿 Enable 🔘 Disable 🚺	LCD screen returns to default display s	creen after 1 min.: O Enable	Disable Apply
Overload auto restart: 🔘 Enable 💿 Disable 🛕	۲] Sol	ar power balance: 💿 Enable	O Disable Apply
Over temperature auto restart: 🔘 Enable 💿 Disable <mark>Appl</mark>			
Charger source priority: Utility and Solar	Apply Output frequency:	50	Hz Apply
Utility Output source priority: Solar first	Apply Back to grid voltage:	46.0	V Apply
Utility and Solar AC input range: Solar only	Apply Max. charging current:	100	- A Apply
Battery type: AGM	Apply Max. AC charging current:	60	- A Apply
Output Mode: Single	Apply Back to discharge voltage:	54.0	V Apply
Bulk charging voltage(C.V. voltage): 56.4 V Apply		Battery cut-off voltage:	42 🖨 V Apply
Floating charging voltage: 54 🌲 V Apply			
			Close

Diagram 4-13

• Charger source priority: Click up-down arrows to set up charger source priority. There are 4 options: utility first, solar first, solar and utility and Solar only. See product manual for the details of these options. Refer to Diagram 4-13.

Parameters setting										
Buzzer alarm: 💿 Enable 🔘 Disable 🖉	pply Beeps while primar	y source interrupt: 💿 Enable	O Disable Apply							
Power saving mode: 💿 Enable 🔘 Disable 🛛	.elda	Overload bypass: 💿 Enable	O Disable Apply							
Backlight 💿 Enable 🔘 Disable 📝	LCD screen returns to default display s	creen after 1 min.: 🔿 Enable	Disable Apply							
Overload auto restart: 🔘 Enable 🔍 Disable 📝	Sol	ar power balance: 💿 Enable	O Disable Apply							
Over temperature auto restart: 🔘 Enable 🌘 Disable 🚽	yladı									
Charger source priority: Utility and Solar	Apply Output frequency:	50	Hz Apply							
	- Apply Back to grid voltage:	46.0	V Apply							
Utility AC input range: Solar	Apply Max. charging current:	100	- A Apply							
SBU Battery type: ਸ਼ਰਮ	Apply Max. AC charging current:	60	- A Apply							
Output Mode: Single	Apply Back to discharge voltage:	54.0	V Apply							
Bulk charging voltage(C.V. voltage): 56.4 🚑 V 🗚 🗛	Y]	Battery cut-off voltage:	42 📮 V 🛛 Apply							
Floating charging voltage: 54 📮 V 🔒 App	Floating charging voltage: 54 📮 V Apply									
			Close							



• Output source priority: Click up-down arrows to set up output source priority. There are 3 options: utility first, solar first and SBU. See product manual for the details of these options. Refer to Diagram 4-14.

Parameters setting			
Buzzer alarm: 💿 Enable 🔘 Disable [Apply]	Beeps while primar	y source interrupt: 💿 Enable	O Disable Apply
Power saving mode: 💿 Enable 🔘 Disable 🛕		Overload bypass: 💿 Enable	O Disable Apply
Backlight. 💿 Enable 🔿 Disable 🛕	LCD screen returns to default display so	creen after 1 min.: 🔿 Enable	• Disable Apply
Overload auto restart: 🔿 Enable 💿 Disable 🔥		ar power balance: 💿 Enable	O Disable Apply
Over temperature auto restart. 🔿 Enable 💿 Disable Apply			
Charger source priority: Utility and Solar	Apply Output frequency:		- Hz Apply
Output source priority: Utility	Apply Back to grid voltage:	46.0	V Apply
AC input range: Appliance	Apply Max. charging current:		- A Apply
Appliance Battery type: UPS	Apply Max. AC charging current:		- A Apply
Output Mode: Single	Apply Back to discharge voltage:	54.0	V Apply
Bulk charging voltage(C.V. voltage): 56.4 📮 V Apply		Battery cut-off voltage:	42 🗘 V Apply
Floating charging voltage: 54 🚔 V Apply			
			Close

Diagram 4-15

 AC input range: Click up-down arrows to set up suitable input range for connected devices. When selecting "Appliance", it's allowed to connect home appliances. When selecting "UPS", it's allowed to connect personal computer. For the detailed input range for connected devices, please check product manual. Refer to Diagram 4-15.

Parameters setting				
Buzzer alarm: 💿 E	Enable 🔿 Disable 🗛 🗛	Beeps while primary	v source interrupt: 💿 Enable	O Disable Apply
Power saving mode: 💿 E	Enable 🔿 Disable 🗛 🎝		Overload bypass: 💿 Enable	O Disable Apply
Backlight: 💿 E	Enable 🔿 Disable 🗛 🎝	LCD screen returns to default display sc	reen after 1 min.: 🔿 Enable	Oisable Apply
Overload auto restart: 🔘 E	Enable 💿 Disable Apply	Sola	ar power balance: 💿 Enable	O Disable Apply
Over temperature auto restart. 🔘 E	Enable 💿 Disable 🗛ply			
Charger source priority: Utility and :	Solar 🗸	Apply Output frequency:	50	Hz Apply
Output source priority: Utility		Apply Back to grid voltage:	46.0	V Apply
AC input range: Appliance	-	Apply Max. charging current:	100	A Apply
Battery type: AGM	•	Apply Max. AC charging current:	60	- A Apply
Output Mode: Single Single	•	Apply Back to discharge voltage:	54.0	V Apply
Bulk charging voltage(C V	of 3 phase output		Battery cut-off voltage:	42 🗧 V Apply
Eleating charging	of 3 phase output of 3 phase output			
				Close

Diagram 4-16

- Battery type: Select connected battery type. There are two options, AGM and Flooded. Please refer to product manual for charging parameter for these two battery types.
- Output mode: In this setting, the options will be different based on different inverter models. Refer to Diagram 4-16.
 - Single: This inverter is set for singe operation.
 - Parallel: This inverter is set for parallel operation.
 - Phase R of 3 phase output: This inverter is set to support connected loads in phase R of 3 phase output.
 - Phase S of 3 phase output: This inverter is set to support connected loads in phase S of 3 phase output.
 - Phase T of 3 phase output: This inverter is set to support connected loads in phase T of 3 phase output.
- Output frequency: Nominal output frequency, 50Hz and 60Hz selectable.
- Back to grid voltage: Click up-down arrow to set up low battery voltage point. If

"SBU" is selected in output source priority, the inverter will transfer output source to grid when battery voltage drop to low battery voltage point.

- Max. charging current: Click up-down arrow to set up maximum charging current. Maximum charging current in different inverter model may be different. Please refer to product manual for the details.
- Max. AC charging current: Click up-down arrow to set up AC charging current. For the detailed setting, please check inverter manual.
- Back to discharge voltage: When battery voltage is higher than this setting voltage, battery will be allowed to discharge.
- Bulk charging voltage: Click up-down arrow to set up bulk charging voltage. Please refer to product manual for the recommended bulk charging voltage based on connected battery type.
- Float charging voltage: Click up-down arrow to set up float charging voltage. Please refer to product manual for the recommended float charging voltage based on connected battery type.
- Battery cut-off voltage: In battery mode, when battery voltage is lower than cut-off voltage point, inverter will shut down battery and transfer to fault mode.

4.2.2. Restore to the defaults

This function is allowed to restore all settings back to default value and clear all data in database.

Restore to the defaults		_										
AC output frequency:	50.0	Hz	Charger source priority:	Utility and Solar								
Bulk charging voltage(C.V. voltage):	56.4		Battery type:	AGM								
Floating charging voltage:	54.0		Enable/disable silence buzzer or open buzzer:	Disable								
Max. charging current:	50		Enable/Disable power saving:	Disable								
Max. AC charging current:	30		Enable/Disable overload restart:	Disable								
Battery cut-off voltage:	42.0		Enable/Disable over temperature restart:	Disable								
Back to discharge voltage:	54.0		Enable/Disable LCD backlight on:	Enable								
Back to grid voltage:	46.0		Enable/Disable alarm on when primary source interrupt:	Enable								
Output Mode:	Single		Enable/Disable LCD come back to default page after 1 min:	Enable								
AC input voltage range:	Appliance		Enable/disable overload bypass:	Disable								
Output source priority:	Utility											
This operation will also clear all existed data stored here, and shall be used cautiously. Restore to the defaults												
				Close	•]							

Select Device control >> Restore to the defaults. Refers to Diagram 4-17

Diagram 4-17

4.3. View

4.3.1. Data

This function is to browse the working data of inverter saved in table or chart format.

• Datasheets

Select View >>Data>>Datasheets or click shortcut icon . Refer to Diagram 4-18. Select browsed device and period to display in the screen. Click "Browse" to get result.

- > "**Print**": Print the listed data table.
- > "Delete": Select specific data and click "Delete" button to delete the record.
- > "Delete all": Click "Delete All" button to delete all records in the listed table.
- > "Export": Click "Export" button to save listed table to local PC in .PDF file.

ata 🛛 🕹 🔀 🕹 🕹 🕹 🕹 🕹 🕹 🕹 🕹 🕹 🕹 📩												
)			
Device: 55355	535553535 🔽 Dis	splay item: 🛛 🗌 🗠	Device mode	Time peri	od: 2012-08-30) 📑	2012-08-30	📑 🖪	owse			
Device mode	Time	AC voltage		PV input voltage	AC output app	AC output acti	Battery voltage				Output frequ	
Line Mode		230.0	50.0		8.0	11.0		95		230.0	50.0	
Line Mode	2012-08-30 14:16:29	230.0	50.0		8.0	10.0		95	16.0	230.0	50.0	
Line Mode	2012-08-30 14:15:29	230.0	50.0		8.0	10.0		95	16.0	230.0	50.0	
Line Mode	2012-08-30 14:14:29	230.0	50.0	12.6	8.0	10.0		95		230.0	50.0	
Line Mode	2012-08-30 14:07:30	230.0	50.0	19.7	323.0	325.0		95	16.0	230.0	50.0	
Line Mode	2012-08-30 14:06:29	230.0	50.0	19.7	324.0	324.0	12.84	95	16.0	230.0	50.0	
Total: 6 row(s)									Export	Delete Dele	te all Cl <u>ose</u>	

Diagram 4-18

• Charts

Select View >>Data>>Charts. Refer to Diagram 4-19.

Select browsed device and period. Then, click "Browse" to get the result.

wice: 55355535553535	Period NO.:	Year	▼ :	2,012 ≑	Browse							
AC voltage	300											
AC frequency	280											
PV input voltage	260											
C output apparent power	240											
AC output active power Battery voltage	220											
Battery capacity												
Charging current												
Output voltage	180											
Output frequency	160											
	140											
	120											
	100											
	80											
	40											
	20											
	0	02	03	04	05	08	07	08	 10	11	12	

Diagram 4-19

4.3.2. Event log

Select View >>Event log or click shortcut icon



to enter event log.

It's to browse history events according to time duration selected. It lists all detailed information and statistics for history events. Refer to Diagram 4-20.

- > "**Delete**": Select specific data and click "Delete" button to delete the record.
- > "Delete all": Click "Delete All" button to delete all records in the listed table.
 - **"Export":** Click "Export" button to save listed table to local PC in .PDF file.

ID	Level	Time	Event		ID	Level		Event	Numi	ber of times
001	Message	2012-08-30 14:14:24	Communication restore	30	001		Communication res	store	5	
002	Message	2012-08-30 14:08:26	Communication lost	30	002	Message	Communication los	st	4	
001	Message	2012-08-30 14:05:39	Communication restore							
002	Message	2012-08-30 14:04:06	Communication lost							
001	Message	2012-08-30 14:04:06	Communication restore							
002	Message	2012-08-30 14:03:28	Communication lost							
101	Message	2012-08-30 14:01:34	Communication restore							
02	Message	2012-08-30 14:00:31	Communication lost							
001	Message	2012-08-30 13:59:39	Communication restore							
					5		5			
									4	
					ju –					
					Number of times					
					Iber					
					2 [−]					
					- .					
							3001		3002	
			Export	Delete				ID		

Diagram 4-20

4.4. Log in and Log out

This short cut icon 💹 is to display the login status. When icon 💹 is displayed, it

means user status is guest. When icon **w** is displayed, it means user logins as administrator.

Click icon and enter password to login the software. The default password is "administrator". Refer to Diagram 4-21.

WatchPower								
WatchPower configuration Device control	View Help							
	Guest Monitored device: C	OM1_55355535	553535					*
😺 jia-yi-nb				-Basic informatio				
_ ≪ сом1_55355535553535			Line Mode		age: 230.0	V Output voltag		v
				AC freque		Hz Output frequend		Hz
				PV input volt	age: 12.6	V Output apparent powe		VA
		Inverter		Battery volt	age: 12.87	V Output active powe		w
		Login	Cource: Litility	Battery capa		% Load percer		%
		Login		ging cun	ent: 16.0			
			Please login first					
	Sou	Password:	••••••					
	Product Information		Login Clear					
	Model type:	Stand alone		Nominal AC voltage:		Nominal output frequer	icy: 50.0	Hz
		transformer			4.3 A	Nominal output curre	ent: 4.3	A
	Main CPU version:	00009.00		Rated battery voltage:		Nominal output apparent pov	ver: 1000.0	VA
	Secondary CPU version:	00001.04		Nominal output voltage:		Nominal output active pov	ver: 800.0	w

Diagram 4-21

Click icon to log out. Then, the status will become to "guest". Refer to Diagram 4-22.

<u> </u>								
2	WatchPower							
N N	/atchPower configuration Device control View Help							
	📲 🏹 💽 👔 🅵 Administrator M							
	jia-yi-nb			Basic information				
	< сом1_55355535535		Line Mode	AC voltage:		V Output voltage:		v
				PV input voltage:		V Output apparent power:		VA
I		Inverter		Battery voltage:		V Output active power:		w
				Battery capacity:				%
		Logout		Charging current				
		<u>-</u>	(au ara gaing ta lagaut, ara yai	Louro				
		Source: 🔍		a suler				
			Yes(Y) No(N)					
	Product Information		Rate	d information				
		odel type: Stand alone		Nominal AC voltage: 23		Nominal output frequency:		Hz
		Topology: transformer			4.3 A	Nominal output current:	4.3	А
	Main CPU	J version: 00009.00		Rated battery voltage: 1		Nominal output apparent power:		VA
	Secondary CPI	J version: 00001.04		ominal output voltage: 23		Nominal output active power:		w
	Main CPU	Source: Cource	ou are going to logout, are you restry North Rate	Battery capacity: Charging current is sum? d Information Nominal AC voltage: 23 Nominal AC current Rated battery voltage: 1	95 16.0 4.3 A 2.0 V	% Load percent: A Norninal output frequency: Norninal output current: Norninal output apparent power.	1 50.0 4.3 1000.0	% Hz A VA

Diagram 4-22

4.5. Language

Currently, software offers some languages for selection:

- ✓ English
- ✓ Polish

When first using the software, it will search proper language to display according to OS language.

4.6. Help

- **About**: Click "Help" menu and select "About" item. It represents the copyright information about software
- **Help**: Click "Help" menu and select "Online help" item. It will open the help manual. Before operating software, please read manual carefully.