

## **Wireless Module Manual**

**WL-BT**

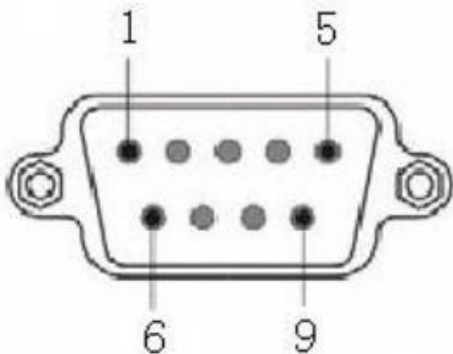
**Version: 1.0**



GROWATT NEW ENERGY CO., LTD.

## 1、 Interface Description

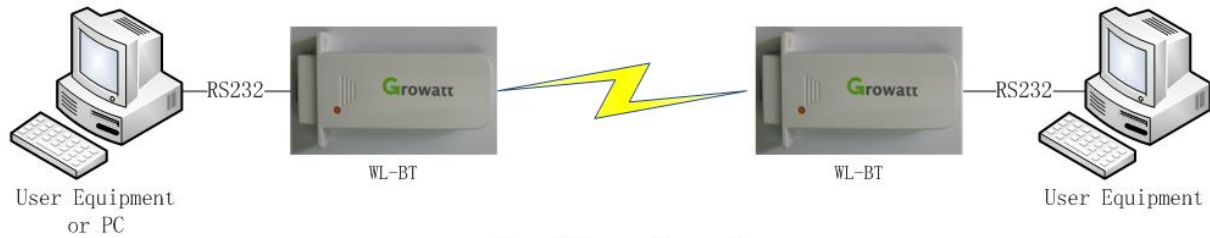


 DB9 Female	Pin No	Signal
	1	Nc
	2	TXD
	3	RXD
	4	Nc
	5	GND
	6	Nc
	7	CTS
	8	RTS
	9	VCC

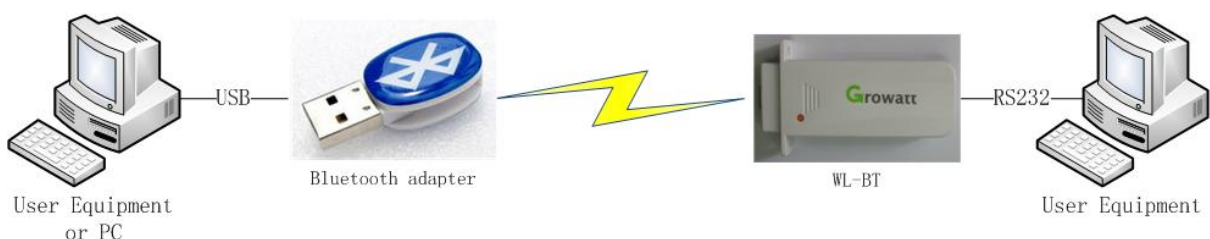
VCC power supply output, the input range DC 7 to 32 V, 200mA.

## 2、 Use Instructions

Application 1



Application 2



Wireless Module consists of master and slave, one master device and one or more slave devices supporting the use of. When the Wireless Module hardware circuit is connected correctly and power up, Master and slave devices will automatically establish a connection and identification with the memory of the other party equipment, after the user's device using a serial cable using the Wireless Module.

- RS232 Default is to use 2-wire (UART\_TX, UART\_RX), baud rate 9600, stop bits, no parity, and no flow control.
- Bluetooth default PIN: 1234

## **WL-BT Slave Mode**

Automatic power-on boot, the blue LED is lit, the Slave Wireless Module can Master Wireless Module search and connect automatically. Connection is successful, the blue light and red light is lit. The Wireless Module will Bluetooth receiver to send data to the serial port, serial port to receive the data sent to Bluetooth. Completely transparent alternative to cable transmission.

## **WL-BT Master Mode**

Automatic power-on boot, blue and red indicator lights up, the Master Wireless Module automatically search from the Slave Wireless Module, and connect automatically.

Connection is successful, the blue light and red light is lit. The Wireless Module will Bluetooth receiver to send data to the serial port, serial port to receive the data sent to Bluetooth. Completely transparent alternative to cable transmission.

## **■ Characteristics**

Bluetooth combination of the data received within 100ms sent through the serial port to ensure data continuity.

### **3、 LED Instructions**

The Wireless Module lights are on or off, indicate that the Wireless Module status. Details are as follows:

The blue indicator	The red indicator	Status
OFF	OFF	Shutdown
OFF	ON	Boot (configuration mode)
ON	OFF	Boot (operating mode) and is not connected
ON	ON	Boot (operating mode) and connected

### **4、 Function switch button Instructions**

Work mode, keep the button is pressed for 2 seconds, the light changed, enter configuration mode.

Configuration mode, keep the button is pressed for 2 seconds; the light is changed into work mode.

## **5、 Mode Instructions**

Operating modes: always maintain the reliability of Bluetooth connectivity, attempt to repair the loss of Bluetooth connectivity. Serial input data output to a Bluetooth, Bluetooth input to output data to the serial port.

Configuration mode: maintain the existing Bluetooth connection, Bluetooth connection and stop the ongoing or are being repaired. You can use the wireless configuration to AT commands. Methods of operation are as follows:

- 1、 Master Wireless Module and Slave Wireless Module connect success.
- 2、 The operation must be configured parameters of the Wireless Module to enter configuration mode and connect successfully.
- 3、 the operation did not enter the configuration mode of the Wireless Module to send AT commands。

## 6、 AT Instruction Set

- Configuration parameters use the baud rate of 9600, stop bits, no parity. Serial port configuration parameters are valid only in the work mode.
- Only when the work from the device in the configuration mode, only allowed executing the parameter setting command. Parameters are modified, you should restart the device, so that the parameter settings to take effect.
- All instruction data in ASCII format to send to return.
- Carriage return, line feed (\ r \ n), two bytes (ASCII code 0x0D, 0x0A) as the end of the sign, otherwise the command is not recognized.
- Each command must be outside of the parameters in the following table "< >" brackets for easy reading and joined without actual instruction "< >".

### 1. Test instructions

Instruction	Reply	Parameter
AT\r\n	\r\nOK\r\n	-

### 2. Software reset

Instruction	Reply	Parameter
AT+RESET\r\n	\r\nOK\r\n	-

### 3. Version

Instruction	Reply	Parameter
AT+VER\r\n	\r\nOK\r\n	< Version >:Program
	\r\n+VER:<Version>\r\n	Version

### 4. Set / query the PIN

Instruction	Reply	Parameter
AT+PIN=<Pin>\r\n	\r\nOK\r\n	<Pin>:PIN Code  (Must be four digits, and the range of 0000-9999)  Default:1234
AT+PIN\r\n	\r\nOK\r\n  \r\n+PIN:<Pin>\r\n	

### 5. Set / query the master-slave role

Instruction	Reply	Parameter
AT+ROLE=<Role>\r\n	\r\nOK\r\n	<Role>:Role  M: Master  S: Slave  Default: M
AT+ROLE\r\n	\r\nOK\r\n  \r\n+ROLE:<Role>\r\n	



## 6. Serial port configuration

Instruction	Reply	Parameter
AT+UART=<Rate>, <Stopbit>,<Paritybit>\r\n	\r\nOK\r\n	<Rate>: Baud rate 0: 9600、1: 19200 2: 38400、3: 57600 4: 115200、5: 230400 6: 460800、7: 921600 8: 1382400 <Stopbit>: Stop bit 0:1 bit 1:2 bits <Paritybit>: Parity bit 0: No parity 1: Odd parity 2: Even parity Default: 0,0,0
AT+UART\r\n	\r\nOK\r\n  \r\n+UART:<Rate>,<Stopbit>,<Paritybit>\r\n	

## 7. Local Bluetooth address

Instruction	Reply	Parameter
AT+LADDR\r\n	\r\n OK\r\n  \r\n+LADDR:<Addr>\r\n	<Addr>: Bluetooth address

## 8. Delete the Bluetooth authentication record

Instruction	Reply	Parameter
AT+CLEARADDR\r\n	\r\n OK\r\n	-

Note: To use the old password to modify the PIN code, matching equipment failure, use the instructions. Use this command; all devices need to be re-paired.

## 9. Statement and Declaration

### FCC Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

-Consult the dealer or an experienced radio/TV technician for help.

CAUTION: any changes or modifications not expressly approved by the party Responsible for compliance could void the user' s authority to operate this equipment. (Example- use only shielded interface cables when connecting to computer or peripheral devices).

**RF warning statement:**

The device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction.

**Declaration of Conformity**

Hereby, GROWATT NEW ENERGY CO., LTD. declares that this device is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.