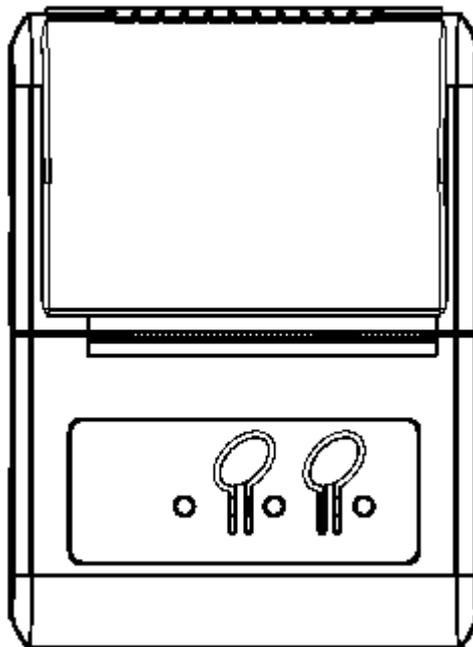


RG-MTP58B User Manual



V1.00

Beijing RuiGong Tech Co., Ltd.

Record

Version	Date	Revision
V1.00	2014.05.12	The first version

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Precautions

Please read the user manual carefully and strict compliance with use of following instructions before operating the printer.

Safety Precautions

Warning: Do not touch the cutter of printer.

Warning: The print head is heating element; do not touch it and its peripheral parts during the printing process or the print just ended.

Warning: Do not touch the surface of print head and its connections to avoid damage it.

Operation Precautions

The printer can not be immersed in water, and do not expose it to rain, it may cause damage to the printer

When printing by USB interface, you can not disconnect the USB cable, otherwise, it may cause incomplete data. When using the Bluetooth mode printing in the printing process no more than 10 meters, it may cause printing garbled or not print.

Although the printer can operate stably at 0 °C to 50 °C, however, the high ambient temperature (45 °C) or low temperature (5 °C) will result in poor print quality.

High ambient humidity (above 85% relative humidity) or low humidity (20% relative humidity or less) will result in reduced print quality.

Use inferior paper or printing paper stored too long may cause the print quality to reduce, or even damage to the printer.

When the printer is working under black mark detection mode (when printing black mark paper), pls. refer to 4.2 Black Mark Detection Description

Instructions. Otherwise, it may cause the printer inaccurately detected the black mark

Using out of batteries before charge them, in this case you can effectively ensure the battery life. Battery life is generally: ≥ 300 times charge and discharge times, battery performance will decrease based on the increase of charging.

Storage Precautions

The printer should be stored at a temperature of $-40\text{ }^{\circ}\text{C}$ to $70\text{ }^{\circ}\text{C}$, relative humidity of 10% to 95% of the environment.

Ordinary thermal paper storage time is shorter, if you want to print long-term preservation of documents, please use the long-term thermal paper.

Do not put the thermal paper in direct sunlight or high temperature storage, if you have opened the paper, please save it at dark place.

If want to prolonged storage printer, users need to make sure to remove the printer batteries stored separately, otherwise it may lead to battery failure, even leakage and damage the printer.

If the battery is stored for more than three months, it needs to be installed on the printer and charge it one time to avoid damage due to self-discharge.

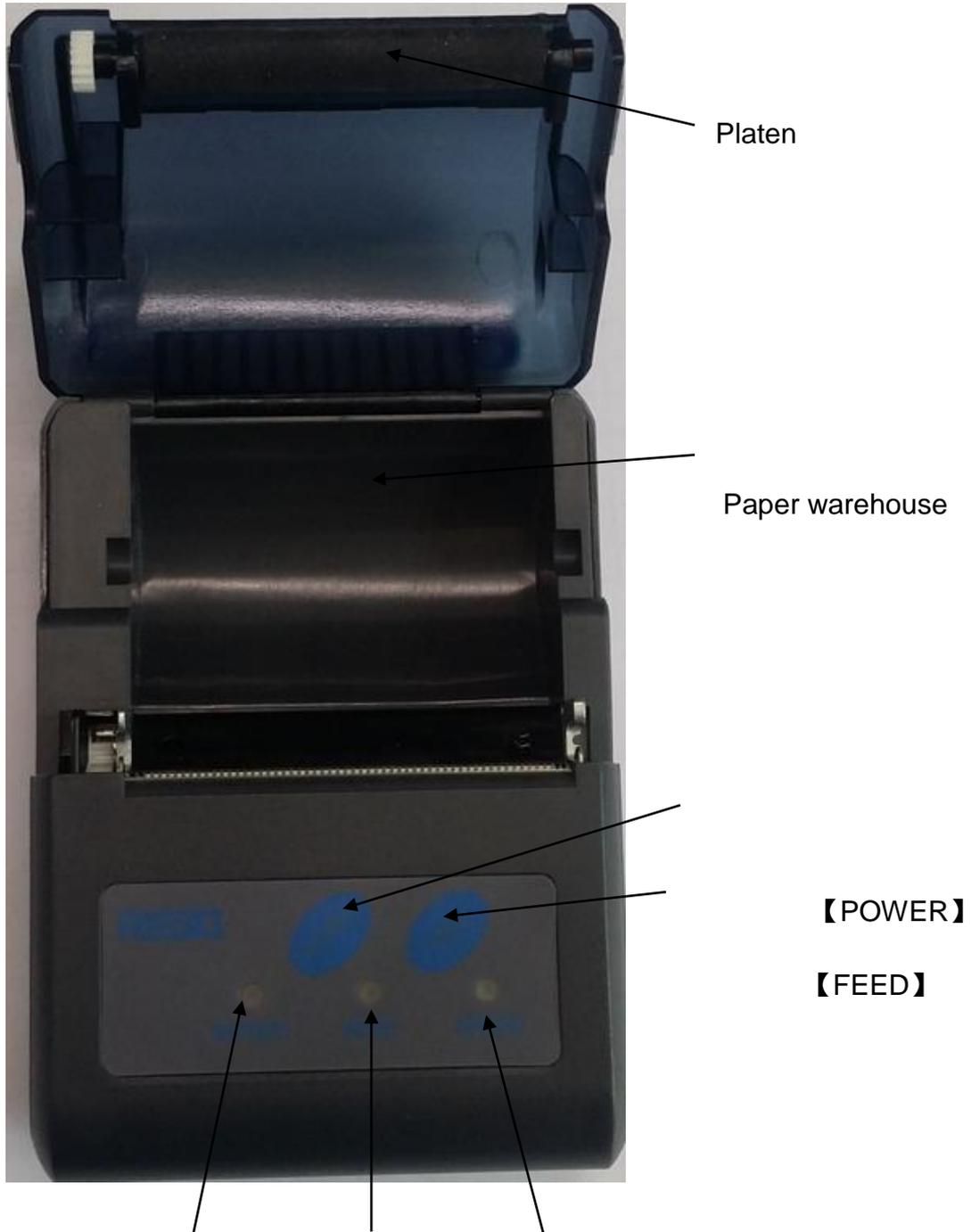
Statement

This product is Class A. In a normal environment, this product may cause radio interference. In this case, users may be required to take practical measures against interference.

Manufacturer reserves the right to modify the contents of the specification without prior notice!

Chapter I Appearance and Model

1.1 Appearance



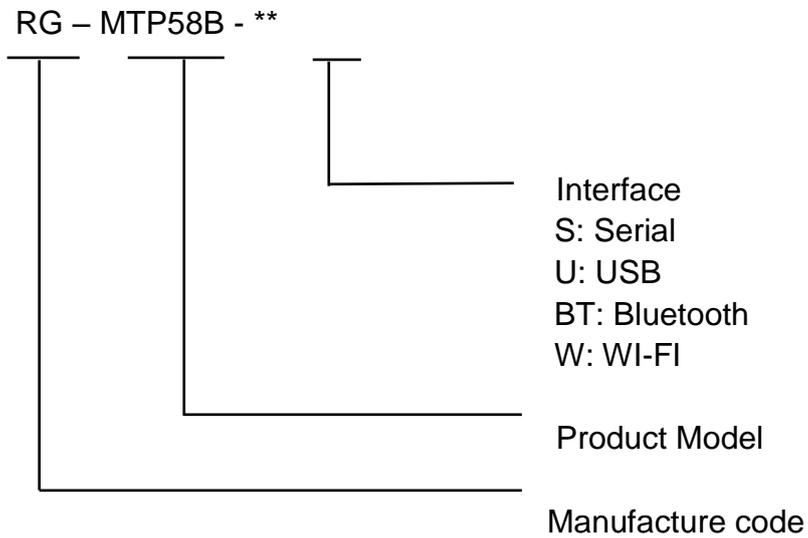
【BATTERY】 【MODE】 【ERROR】

【BATTERY】 : Battery indicator **【MODE】** : Mode indicator

【ERROR】 : Error indicator

【POWER】 : Power button 【FEED】 : Feeding button

1.2 Model



RG-MTP58B-SU Support serial and USB

RG-MTP58BBT-SUBT Support serial, USB, Bluetooth

RG-MTP58BW-SUW Support serial, USB, WI-FI

Chapter II Features

2.1 Print Performance

Printing method: Direct thermal line
Paper width: 58mm
Printing effective width: 48mm
Resolution: 8 dots/mm(203dpi)
Dots/line: 384 dots
Printing speed: Max 80mm/s
Paper thickness: 60~80µm
Font: GB18030-2000 and BIG5 (16*16 and 24*24),
ASCII, codepage, defined character (12*24 and 9*17)
1D barcode: UPCA, UPCE, EAN13, EAN8, CODE39, ITF25,
CODABAR,
CODE93, CODE128
2D barcode: PDF417, QR CODE, DATA Matrix

2.2 Power Supply

DC 5~8.5V, 2A;

2.3 Interface

Serial, USB, Bluetooth, WI-FI

2.4 Physical Parameters

Outer Dimension:108(L)*78(W)*45(H)mm
Weight: 150g (Paper roll and batteries excluded)
Paper roll diameter:≤40mm

2.5 Environmental Parameters

Working temperature: 0°C~50°C
Working Humidity:10%~80%

Storage temperature: -40°C~70°C

Storage Humidity: 10%~95%

2.6 Others

Loading method: Clamshell paper loading, pls. refer to the details 3.1.2

Black mark positioning: Available (details see 4.2 black mark descriptions)

Paper ending detection: When running out of paper, the printer's ERROR LED has been lit. If set to allow Beep alarm, the internal buzzer will beep and stops printing.

Printing commands: ESC/POS compatible with command set (Details see REGO thermal printer commands manual)

Power supply: 7.4V/2000mAh rechargeable lithium polymer battery

Battery alarm: When the battery power is out, the printer [BATTERY] red indicator light flashes

Recharge: Fast charging, about 3 hours

Available time on one charge: Less than 25% print density, printing length is greater than 120 meters, standby time is more than 120 hours. This parameter is only for reference. If the battery is used for a long time, it may lead to decreased capacity, and can not be sure the print time;

Chapter III Operation Method

3.1 Preparation Before Use

3.1.1 Battery Installation

1. Place the battery in the warehouse
2. Replace the battery cover and lock the battery cover.

3.1.2 Loading Paper Roll

1. Hold the cover on both sides, open the paper warehouse cover
2. Put a new roll in. Please take a notice that use a valid print surface

- on the outside of the paper
3. Pull out the end part of the paper, put the paper in the machine paper-out center.
 4. Close the paper cover torn off the excess paper.

3.2 Basic Function Operation

3.2.1 Power On

After hold **【POWER】** for one second, printer **【MODE】** lights, and “beep” , then release **【POWER】** , printer enter into working mode, **【BATTERY】** light show battery power.

3.2.2 Power Off

In power on, hold **【POWER】** around 1 second, and printer will beep tone, printer **【MODE】** light-off. Release **【POWER】** , printer is power off.

3.2.3 Feeding Paper (Feeding manually)

In the normal working status, press **【FEED】** , the printer start feeding paper, release **【FEED】** , the printer stop feeding paper. In black mark mode, press **【FEED】** , the printer start feeding paper, when passed the black mark it will stop feeding. If the paper is not black mark paper, the printer stops feeding automatically after feeding 30cm.

3.2.4 Self-Test

Self-test: in power off mode, hold **【FEED】** , power on, after printer beep tone, release **【POWER】** and **【FEED】** , the printer will print a receipt about printer status and configuration.

3.2.5 Hex Printing

Hex printing function: print the data from host by hex and corresponding character in order to easy debug application programming.

Hex printing:

In power off mode, first hold FEED button, then power on the printer, ERROR LED flashing, holding FEED button more than 3 seconds, then release FEED button, printer enter hex printing mode, and print the entrance hex printing mode prompt message.

ESC hex printing: Power off or press FEED button 3 times, printer will exit hex printing mode, and print exit hex printing prompt message.

3.2.6 Enter The Program Upgrade Mode

In power off mode, first hold FEED button, then power on the printer, after the printer beep, then release POWER button. ERROR light flashes. Keep holding FEED button more than 3 seconds, then release FEED button, press FEED button 5 times, wait 3 seconds, printer enter the program upgrade mode. At this time ERROR LED flash each 2 seconds

Fast entrance the program upgrade mode: In power off mode, first hold FEED, then power on the printer, when ERROR LED lights, release FEED button immediately. Printer enter program upgrade mode. At this time ERROR LED flash each 2 seconds

If users want to upgrade program by USB and serial, they need to use the professional software which can be download on our website:

www.regotek.com.

3.2.7 Power Charging

After working a period of time, printer will use out of battery power. When the printer battery is near end of power, red battery power LED will flash alarming, users need to recharge the battery at this moment.

Recharging method: Connect printer and power supply by adapter. When charging, printer BATTERY LED flashes as color order. When well-recharged, BATTERY LED is green. The whole recharging time is about 3 hours

If the printer is on working when recharging, the recharging time will be longer.

When recharging, if BATTERY LED is not lit, it means the battery charging failure. Users need to check the battery installation and connection.

3.3 Printer Parameter Settings

By “Tool set”, printer can configure parameter by computer, such as setting language, character, printing density, default code-page, printer bluetooth name and password etc. Details see “Tool set” help file. This help file will be available along with software.

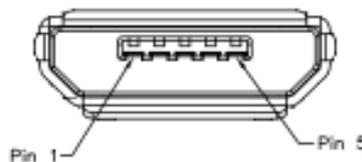
3.4 Printer Connection and Print

3.4.1 USB Connection

RG-MTP58B printer USB interface standard is MICRO USB-B. Follow the USB printer protocol.

3.4.2 Serial Connection

RG-MTP58B printer serial interface is compatible with RS232C. Support RTS/CTS and XON/XOFF handshaking protocol, connection interface model is JTC3-5A. See Pic..3-1 below



Pic.. 3-1 Serial interface socket pin no.

Serial interface socket pin no. Define as table 3-1 below:

Pin no.	Signal	Signal direction	Specification
1	DTR	Out	The same as RTS
2	RXD	In	Printer received the data from PC.

3	TXD	Out	The printer will be sent XON/XOFF to PC when operating the XON/XOFF handshake protocol.
4	RTS	Out	This signal reflect the printer status. SPACE indicates printer is ready, and can receive data. MARK indicates printer is busy, can receive data
GND	5	-	Signal ground

Table 3-1 Serial interface pin no.definition

Note: ①Source means the source of the signal emitted

In serial connection, set baud rate and data structures by “Tool set”. Default setting is 9600bps, 8 bits of data, data structure is no parity, and 1 stop bit

There are 2 types of handshaking optional. 1. Hardware control, 2.X-ON / X-OFF protocol. The description of two type handshaking is as follows Table 3-2

Handshaking	Data direction	RS-232C interface signal
Hardware control	Data can be access	RTS and DTR in Space status
	Data can be access	RTS and DTR in Mark status
X-ON/X-OFF control	Data can be access	Send X-ON 0x11 based on TXD
	Data can be access	Send X-OFF 0x13 based on TXD

Table 3-2 Two types of handshaking

Corresponding connection relationship (Printer connect with computer DB9)
See Table 3-3.

No.	JTC3-5A socket	DB9pin
1	1	6
2	2	3
3	3	2

4	4	8
5	5	5

Tablet 3-3 Printer serial port connect with computer DB9.

3.4.3 Bluetooth Connection

Hand terminal, notebook and other intelligence terminal drive to printer through bluetooth. There are two versions of RG-MTP58B bluetooth, 2.0 and 4.0. Compatible with bluetooth 2.0 and bluetooth 4.0 standard bluetooth, power lever is CLASS 2. Effective distance is 10m. Bluetooth of printer is guest device. The initial device name for RG-MTP58B, the initial password is "1234" or "123456" (4.0 Bluetooth). Users can use the "tool set" to modify the device name and password. Changing the device name and password method described in "setting tool" in the help file as needed.

The mobile printer need to pair with bluetooth host device first, the pairing initiated by the master device before RG-MTP58B working. The pairing is as follows:

1. Power on the printer
2. Host device search external bluetooth device
3. If there are many external bluetooth device, choose RG-K628 printer
4. Input password: 1234
5. Finish pairing

Pls. refer to the host device bluetooth manual with the detailed pairing method.

Note:

- a. When pairing, printer RG-MPT58B must keep power on
- b. When the bluetooth of printer and host device are well-paired, printer bluetooth will not be available for other host device bluetooth searching. Till the printer bluetooth disconnected from the paired host device
- c. After well-pairing, printer MODE LED flash 2 times

3.4.4 WI-FI Connection

With WI-FI hand terminal, notebook and other intelligence terminal drive to printer through WI-FI

Printer RG-MTP58B WI-FI support AP, STA, AP+STA.

RG-MTP58B Printer default parameter as below:

Device name: RG-MTP58B
AP SSID: RG-MTP58B;
AP Encryption: OPEN, NONE;
AP IP address: 192.168.1.1;
Network parameters: TCP, SERVER,9000,192.168.1.110;
Printer IP address: DHCP,0.0.0.0,0.0.0.0,0.0.0.0;

AP mode:

The printer RG-MTP58B as a wireless access point, the other device as a wireless information terminal is connected to the printing.

STA mode:

The printer RG-MTP58B as a wireless terminal through a wireless access point connects with other devices.

AP+STA mode:

RG-MTP58B printer STA interface can be connected to wireless router and connected to the network server via TCP connections, while the printer AP interface is also available. Mobile phone, PDA etc can control the printer or configure WI-FI module through AP interface,

In the first use of WI-FI interface, you need to set WI-FI module. The details see chapter V

3.5 Indicator Light and Buzzer Description

【ERROR】 LED:

Printer has three indicator lights: 3-color BATTERY LED, green MODE LED, and red ERROR LED

The definition of the indicator light:

【MODE】 LED:

Long lit: The printer is turned on and the wireless module (Bluetooth, WI-FI) in a disconnected state.

Flash 1 time: External power supply is plugged, but the printer is turned off.

Flash 2 times: The printer is turned on and the wireless module (Bluetooth, WI-FI) is connected.

【ERROR】 LED:

Long lit: printer is out of paper

Flash: Printer appears error. Different flashes, different errors

1. Automatic recoverable error, LED light continuous flashing. Such as print head temperature error

Error type	Error description	ERROR flashing way
Automatic recoverable error	LED continuous flashing: print head over-heated	

2. Unrecoverable error. After flash several times, LED light is on for a period, and then cycling. The number of flashes indicates the type of error

Error type	Error description	ERROR flashing way
Unrecoverable error	LED flash 1 time: Memory read and write errors	
	LED flash 2 times: Overvoltage	
	LED flash 3 time: voltage shortage	
	LED flash 4 times: CPU Execution errors (wrong address)	
	LED flash 5 times: UIB error	
	LED flash 6 times: FLASH write error	
	LED flash 7 times: Parameter write error	
	LED flash 8 times: Temperature detecting circuit errors	

【BATTERY】 LED:

Power LED is made of 3 color, to indicate battery charge status

Green: High power capacity

Blue: Medium power capacity

Red: Low power capacity

Red light flash: low power capacity, need to recharge timely

3 color off: power off or mis-installed battery.

Printer has a buzzer which can give prompt message. Pls. see the description of buzzer beep prompt message.

Different buzzer beeps, different error types

When printer is in error status, the meaning of beep number is the same as LED light flash number.

Power on: Beep 1 time

Power off: Beep 2 times

In addition, the buzzer can be set to beep when a cut is performed, in order to prompt a receipt printing is complete.

Chapter IV Other Settings

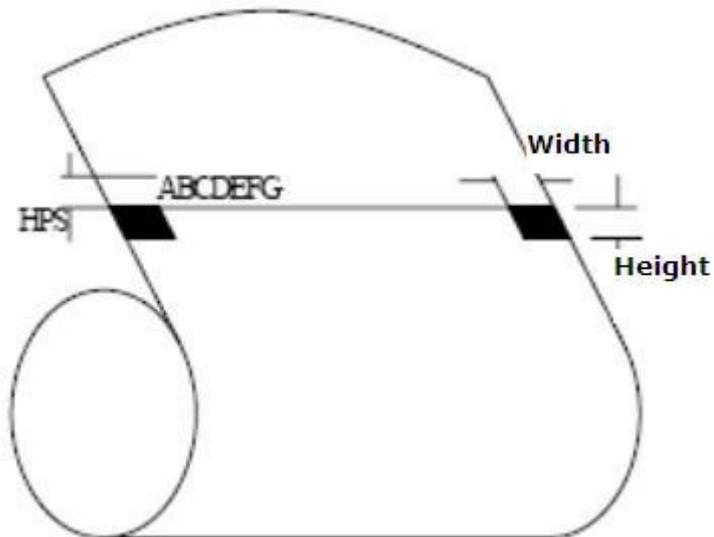
4.1 Programming Command Manual

“RG Thermal Printer Programming Command Manual” is a technical manual guide for users to develop RG-MTP58B, this manual can be obtained from the REGO

This manual includes printer hardware interface technical description, printing control commands set technical document, and how to print black mark, and how to position black mark.

4.2 Pre-printed Black Mark Description

If user want to position black mark printing, pls. follow the guidelines below otherwise it may cause the printer does not recognize the black mark. Pre-printed black mark specification:



Print position: Black mark should be printed on the left or right edge of the paper, the same as the drawing above.

Width: $\geq 7\text{mm}$

Height: $4\text{mm} \leq \text{height} \leq 6\text{mm}$

The reflectance of infrared light: $< 10\%$ (The reflectance of infrared light of the rest of paper black mark width $> 65\%$)

HPS: HPS black mark from the edge of the printer to print on the edge of starting distance. $4.5\text{mm} \leq \text{HPS} \leq 6.5\text{mm}$

Chapter V WI-FI Wireless Module

Setting and User guide

5.1 Web Management Page Description

In the first use of WI-FI interface of RG-MTP58B, users need to set the WI-FI module. Users can connect PC with AP interface of RG-MTP58B, and set it by WEB management.

The default SSID of AP interface is RG-MTP58B. IP address, user name and passwords see below:

RG-MTP58B network default setting table

Parameter	Default configuration
SSID	RG-MTP58B
IP address	192.168.1.1
Subnet mask	255.255.255.0
User name	admin
Password	admin

5.1.1 Open Management Page

First connect PC with RG-MTP58B by wireless LAN. SSID is RG-MTP58B. After well-connected, open IE, and enter http://192.168.1.1 in the address bar. In the pop-up dialog box enter the user name and password, and then "OK."



Pic. 5-1 Open management page

Then pop-up RG-MTP58B management web interface. This management web interface can support Chinese and English optional. Menu includes 9 pages, like SYSTEM INFORMATION, MODE SELECTION, STA SETTINGS, AP SETTINGS, OTHER SETTINGS, ACCOUNT MANAGEMENT, SOFTWARE UPGRADE, MODULE RESET, and RESTORE FACTORY DEFAULT SETTINGS.

5.1.2 System Information Page

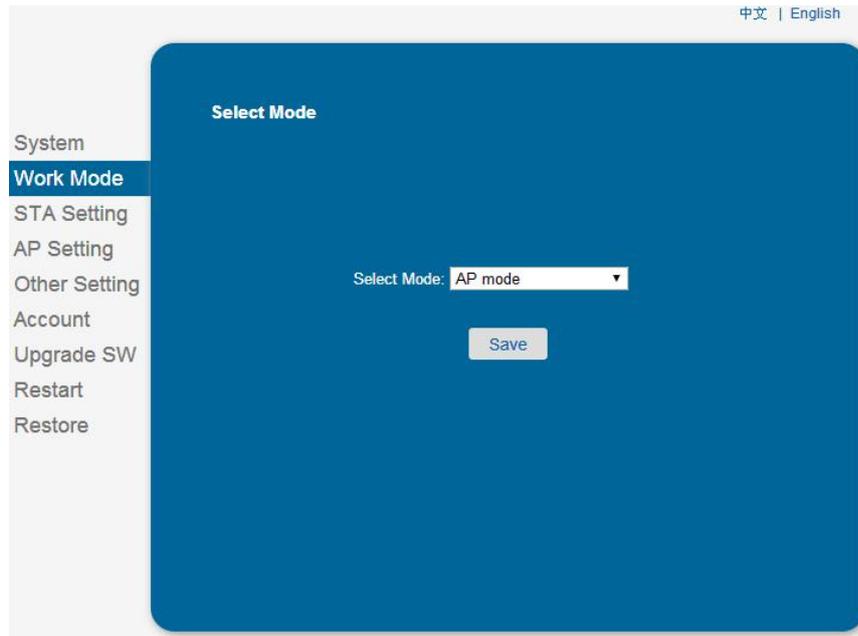
In this page, the user can obtain the important information of current device including device serial number, firmware version, wireless networking information and related parameter settings. Also can read wireless signal strength instruction in STA mode.



Pic. 5-2 System information page

5.1.3 Work Mode Selection Page

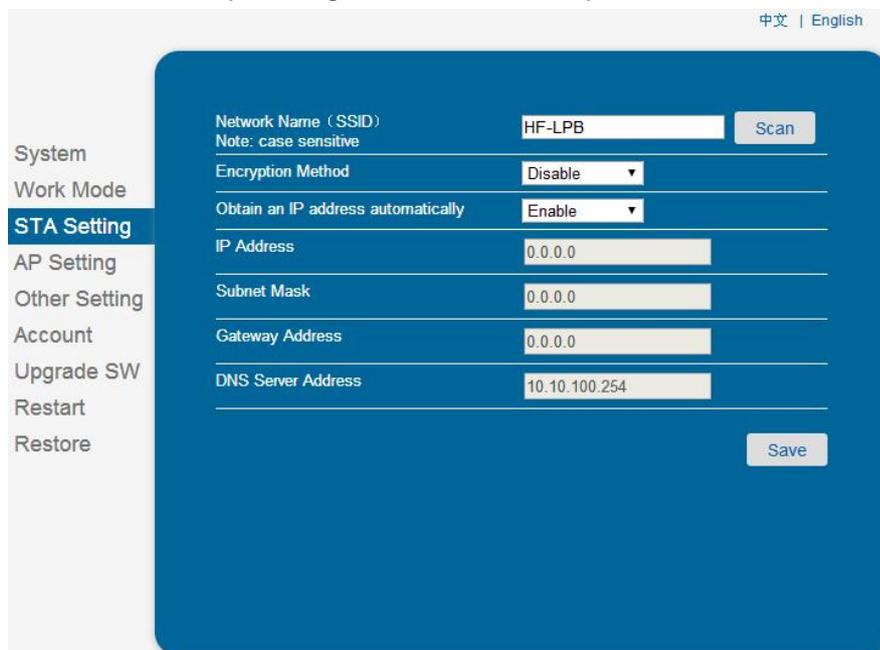
WF-FI modules of RG-MTP58B can be used as a wireless access point (AP mode) , convenient for users to configure. It can also be used as a wireless information terminal (STA mode) by connection fortune server via a wireless router. It can also be configured AP + STA mode, convenient for the user to form a flexible networking.



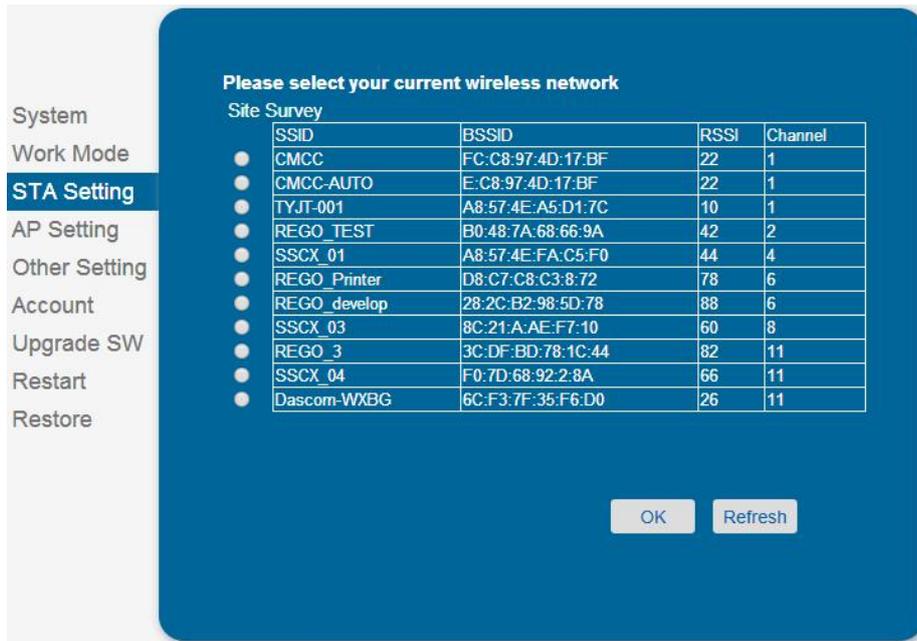
Pic. 5-3 Work Mode selection page

5.1.4 STA Settings Page

In this page, users can click on [search] button to automatically search for nearby wireless access points and connect it by setting the network parameters. It can be connected only when encrypted information is consistent with the corresponding wireless access point.



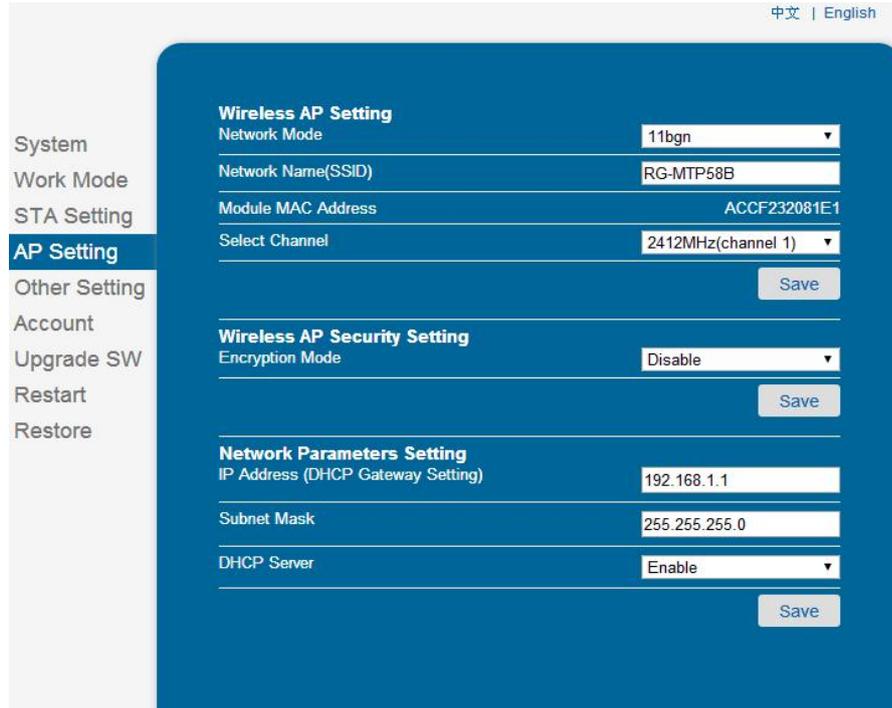
Pic. 5-4 STA settings page



Pic. 5-5 STA web search user router page

5.1.5 AP Settings Page

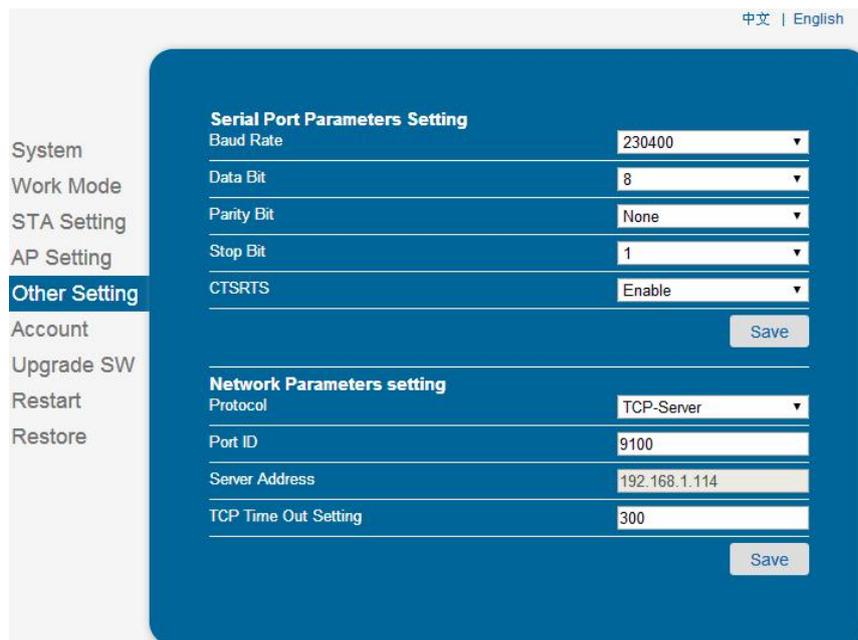
When select the printer working in AP or AP + STA mode, users need to set up wireless and network parameters on this page. Most systems support DHCP to automatically obtain IP. It is recommended to set the LAN DHCP parameter type as "Server", otherwise STA need to manually enter the appropriate network parameters



Pic. 5-6 AP settings page

5.1.6 Other Setting Page

RG-MTP58B printers WI-FI modules: Connect the module and the printer via the serial port, the serial port parameters can not be altered, otherwise, it can not work properly. In this page, Users simply set the device to communicate with the TCP layer protocol parameters fortune.



Pic.. 5-7 Other settings page

5.1.7 Account Management Page

This page is used to set the user-device Web Server user name and password

System	
Work Mode	
STA Setting	
AP Setting	
Other Setting	
Account	
Upgrade SW	
Restart	
Restore	

Set a New Account and Password

Current User Name	admin
Current Password	admin
New User Name	<input type="text"/>
New Password	<input type="text"/>

Save

Pic. 5-8 Account management page

5.1.8 Software Upgrade Page

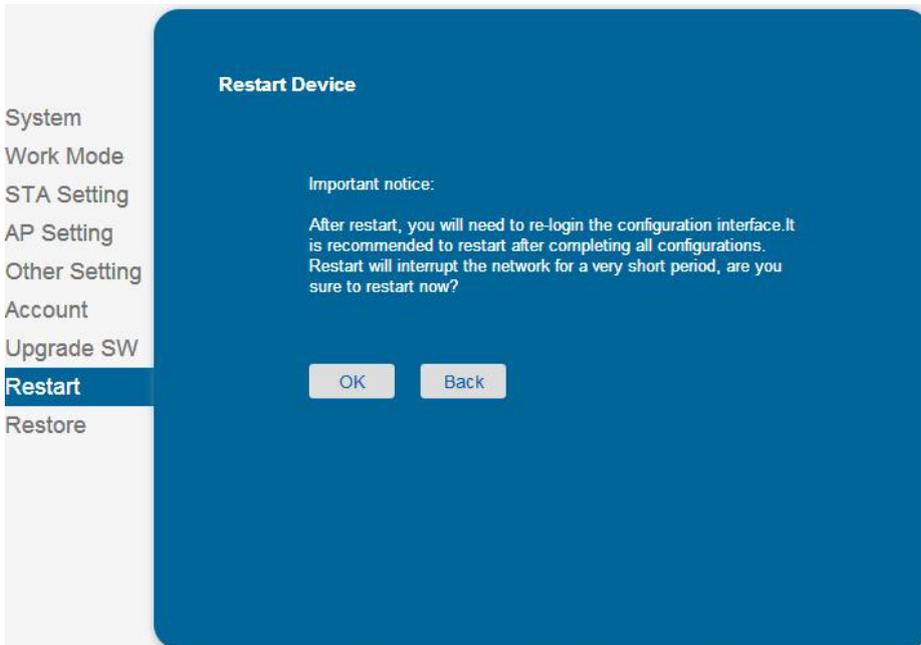
Users can update the firmware file on the local computer to upload the WI-FI modules firmware. Please consult our technical staff for detailed upload methods. If not really need to upgrade firmware, please do not arbitrarily set, or it may damage the module.



Pic. 5-9 Software upgrade page

5.1.9 Module Reset Page

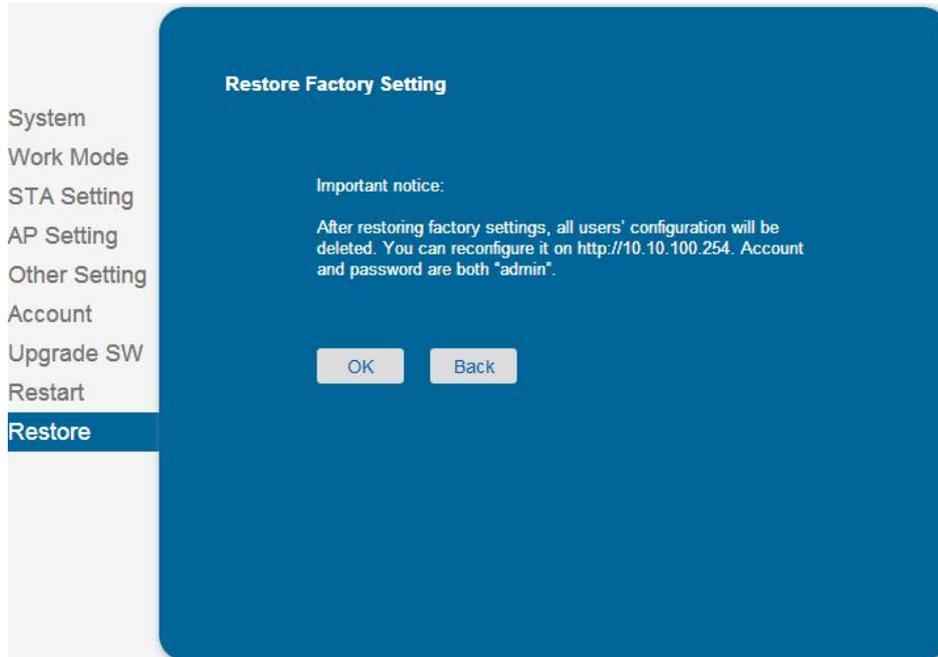
After the restart, newly saved configuration parameters will be used.



Pic. 5-10 Module reset page

5.1.10 Restore Factory Default Settings

After restore the factory settings, the user's former configuration will be deleted. Users can reconfigure at <http://192.168.1.1>, username and password are admin. And the system will automatically turn off STA mode wireless.



Pic.. 5-11 Restore factory default settings

5.2 WI-FI Interface Usage Instructions

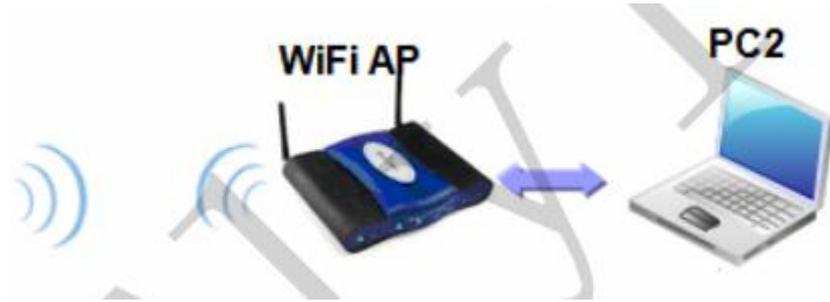
5.2.1 Software Debugging Tools

You can use the following general procedure as a debugging tool for WI-FI interface (Users can also use other debugging tools)

Network debugging tool: TCPUDPDbg

5.2.2 Net work Connection

There are 2 kinds of connection when debugging. Users can be tested in accordance with the actual application. Use STA interface, printer and PC connected to a wireless AP respectively, shown as below:



Pic. 5-12 STA interface connection debugging

Use AP interface, PC connected with printer AP interface, shown as below:



Pic. 5-13 AP interface connection debugging

5.2.3 The Initial Parameters

Printer default SSID: RG-MTP58B

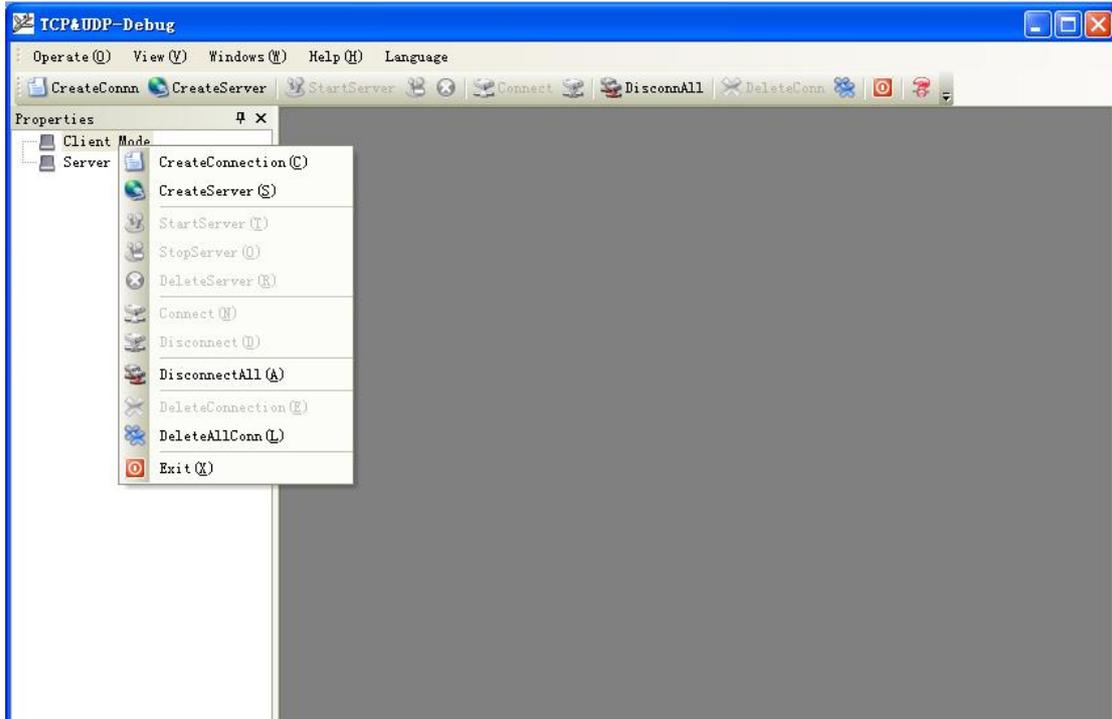
Printer default encryption: open, none

Printer default network parameters: TCP,Server,9000,192.168.1.1;

Printer default IP address: DHCP,0.0.0.0,0.0.0.0,0.0.0.0;

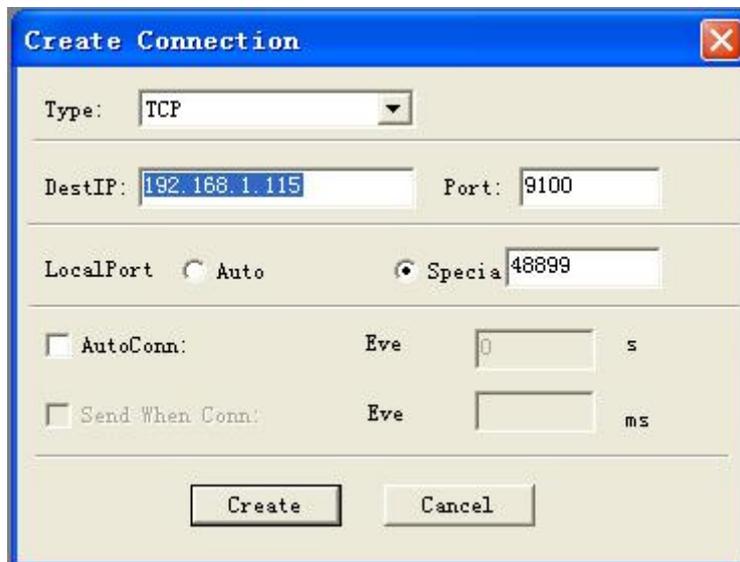
5.2.4 Printer Test

Connection shown above to open TCPUDPDbg program in PC2, create a new connection. If printer works in Server mode, users should create a client connection, or create a server mode connection.



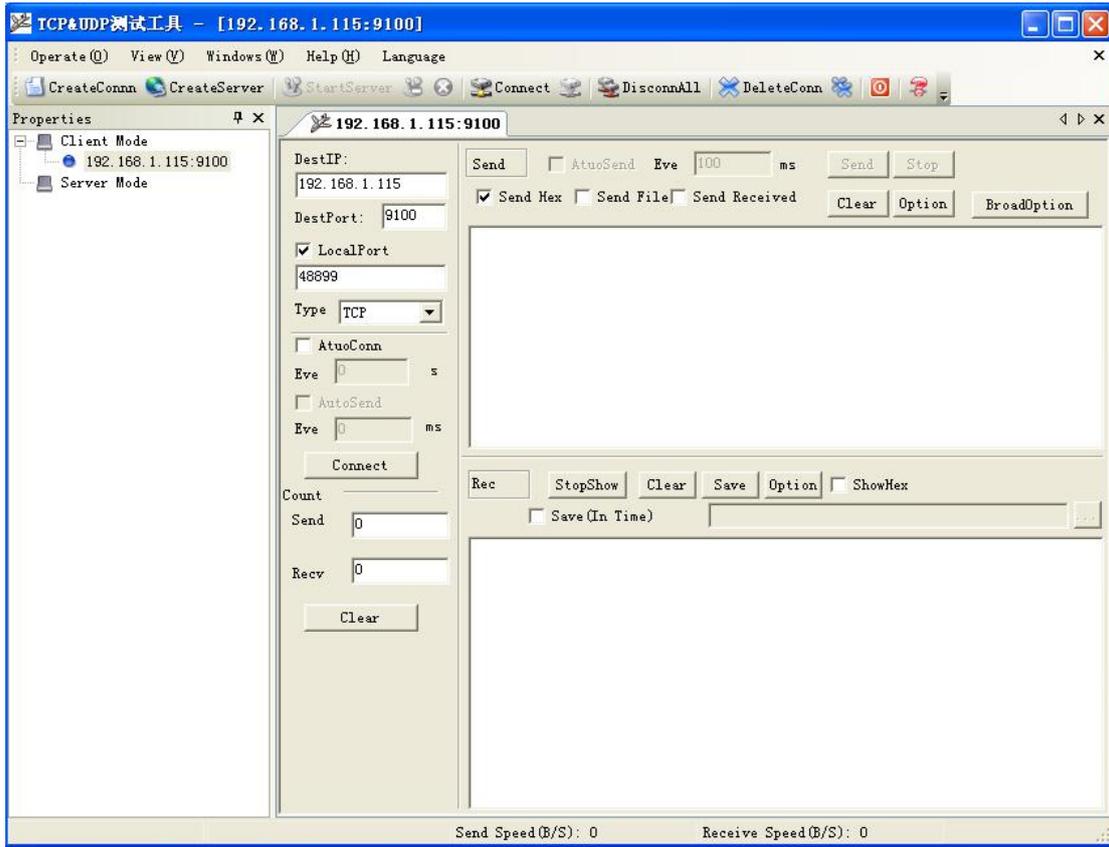
Pic. 5-14“TCPUDPDbg” Create connection

Then configure TCP/UDP connection parameter, default parameter shown as below



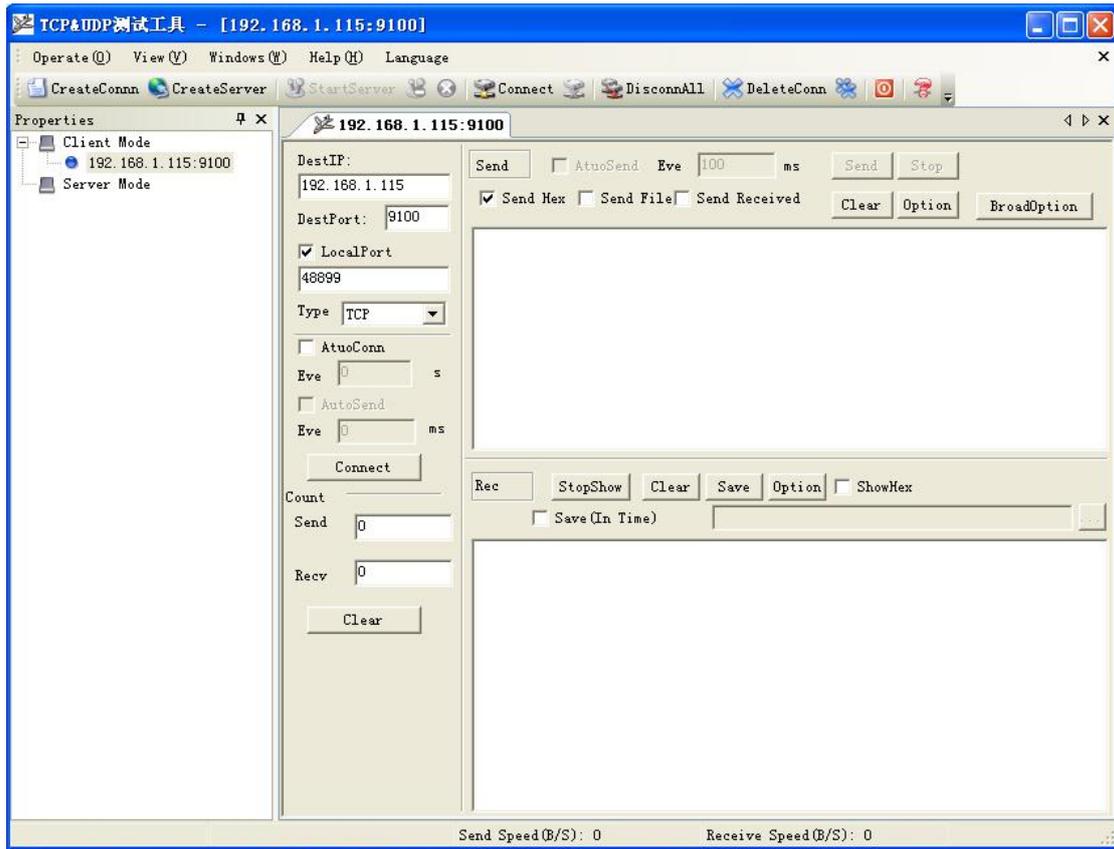
Pic. 5-15“TCPUDPDbg” configuration

Well-configuration, click “Create”



Pic. 5-16“TCPUDPDbg” connection

Then click connection button, after well-connected, users can send data via TCPUDPDbg to printer to control the printer for printing operation.



Pic. 5-17“TCPUDPDbg”connection succeed