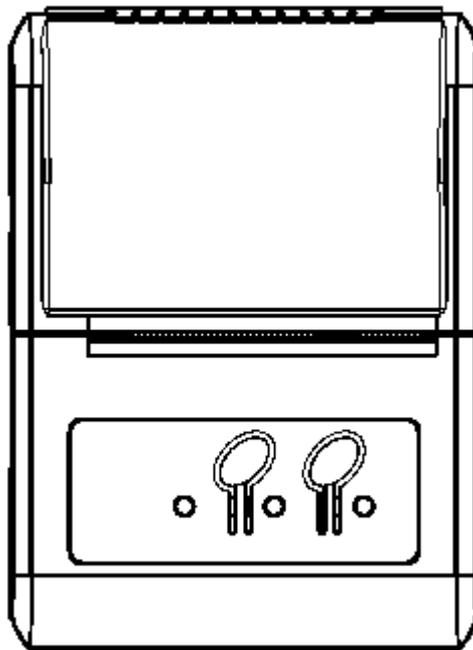


# RG-MTP58B User Manual



V1.01

Beijing RuiGong Tech Co., Ltd.

content

**Precautions** ..... - 4 -

Safety Precautions ..... - 4 -

Operation Precautions ..... - 4 -

Storage Precautions ..... - 5 -

**Chapter I Appearance and Model** ..... - 6 -

1.1 Appearance..... - 6 -

1.2 Model ..... - 7 -

**Chapter II Features** ..... - 8 -

2.1 Print Performance ..... - 8 -

2.2 Power Supply ..... - 8 -

2.3 Interface ..... - 8 -

2.4 Physical Parameters ..... - 8 -

2.5 Environmental Parameters ..... - 8 -

2.6 Others ..... - 8 -

**Chapter III Operation Method** ..... - 10 -

3.1 Preparation Before Use..... - 10 -

3.1.1 Battery Installation ..... - 10 -

3.1.2 Loading Paper Roll ..... - 10 -

3.2 Basic Function Operation..... - 10 -

3.2.1 Power On ..... - 10 -

3.2.2 Power Off ..... - 10 -

3.2.3 Feeding Paper (Feeding manually) ..... - 10 -

3.2.4 Self-Test..... - 10 -

3.2.5 Hex Printing ..... - 10 -

3.2.6 Enter The Program Upgrade Mode ..... - 11 -

3.2.7 Power Charging ..... - 11 -

3.3 Printer Parameter Settings..... - 11 -

3.4 Printer Connection and Print..... - 12 -

3.4.1 USB Connection ..... - 12 -

3.4.2 Serial Connection..... - 12 -

3.4.3 Bluetooth Connection..... - 13 -

3.4.4 WI-FI Connection ..... - 14 -

3.5 Indicator Light and Buzzer Description ..... - 14 -

**Chapter IV Other Settings** ..... - 16 -

4.1 Programming Command Manual ..... - 17 -

4.2 Pre-printed Black Mark Description..... - 17 -

**Chapter V WI-FI Wireless Module Setting and User guide** ..... - 18 -

5.1 Web Management Page Description ..... - 18 -

5.1.1 Open Management Page ..... - 18 -

5.1.2 System Information Page..... - 19 -

5.1.3 Work Mode Selection Page..... - 19 -

5.1.4 STA Settings Page..... - 20 -

5.1.5 AP Settings Page .....	- 21 -
5.1.6 Other Setting Page .....	- 22 -
5.1.7 Account Management Page .....	- 23 -
5.1.8 Software Upgrade Page .....	- 23 -
5.1.9 Module Reset Page .....	- 24 -
5.1.10 Restore Factory Default Settings .....	- 24 -
5.2 WI-FI Interface Usage Instructions .....	- 25 -
5.2.1 Software Debugging Tools .....	- 25 -
5.2.2 Net work Connection .....	- 25 -
5.2.3 The Initial Parameters .....	- 26 -
5.2.4 Printer Test .....	- 26 -

## Precautions

Please read the manual carefully and strictly follow the instructions to operate the printer.

### Safety Precautions

Be sure to use the specified battery and power supply provided by our company. Otherwise it may cause fire, explosion or damage printer, meanwhile, the battery also may be damaged.

Don't put battery into the fire, don't disassemble or heat the battery, don't be short circuit, it may cause fire, explosion or damage printer. Meanwhile, the battery also may be damaged.

If the printer would not be used for a long time, be sure to remove the battery, otherwise the battery may leak liquid which is corrosive liquid. If improper operation causes battery leak liquid, and it pastes in the skin or clothes, please rinse it by clean water. And if pastes in the eyes, please rinse them thoroughly by clean water and see a doctor.

Please do not open the paper case cover when it is printing or just when printing is finished, do not touch the print head with hand or body, overheat may cause scald.

Please do not touch the print head surface and connection cables, otherwise the static electricity may damage the print head.

### Operation Precautions

Water or other liquid should not be spilled into the printer, also the printer should not be appeared in the rain, or else may cause printer damage.

Please do not open the paper case cover when it is printing, otherwise the printer may work improperly.

If printer is using Serial or USB connection to work, should not unplug the Serial or USB cable, or else some printing data may be lost. When printer is using Serial or USB connection to work, the distance of communication should be within 10 meters. When printer is using Bluetooth connection to work, the distance of communication should be within 10 meters, and when using WIFI, the distance of communication should be within 30 meters indoors and 100 meters outdoors. Otherwise the printer doesn't print or prints improperly.

Too high (over 45°C) or too low (below 5°C) environment temperature and too high (over 85%) or too low (below 20%) environment humidity both effect the printing quality.

The printer paper roll with poor quality or stored for too long time also may reduce the printing quality even damage the printer.

Under the black mark detecting mode, the printer requires that the pre-printed black mark is accordant with the printing rule of black mark (please

refer to details in Chapter 4.2), otherwise the black mark can not be detected correctly.

It would be better use up the power of the battery before charge up it, as it can ensure the using life of the battery. Usually the life the battery is: it only has 80% capacity after charge and discharge 500 times. The battery performance will be decreased with the increase of the charge and discharge times.

### Storage Precautions

The printer should be placed in such an environment that the temperature between  $-40^{\circ}\text{C}$  and  $70^{\circ}\text{C}$ , and the relative humidity is between 10% and 95%.

Normal thermal paper and black mark paper can't be kept too long, if you need to keep the receipt for a long period, please choose long-term effective thermal paper. The thermal paper should be keep away from high temperature environment and point-blank sunshine, please store it where is away from light if it has been open.

If the printer will be stored for a long time, please be sure to remove the battery and store it separately. Otherwise may damage the battery and printer.

The battery shall be charged upon it stored more than 3 months, otherwise it may be damaged by self-discharging.

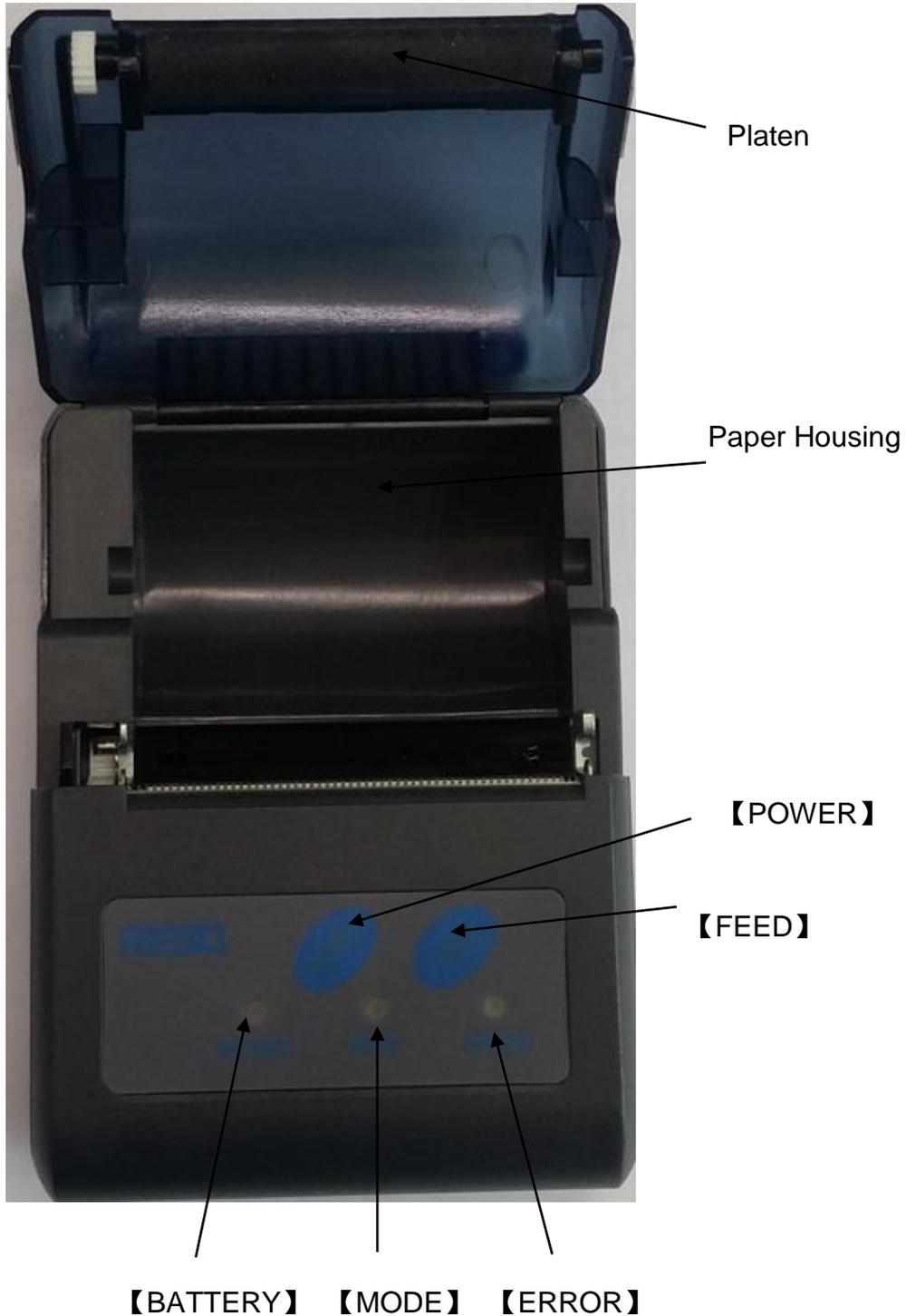
### **Statement**

**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

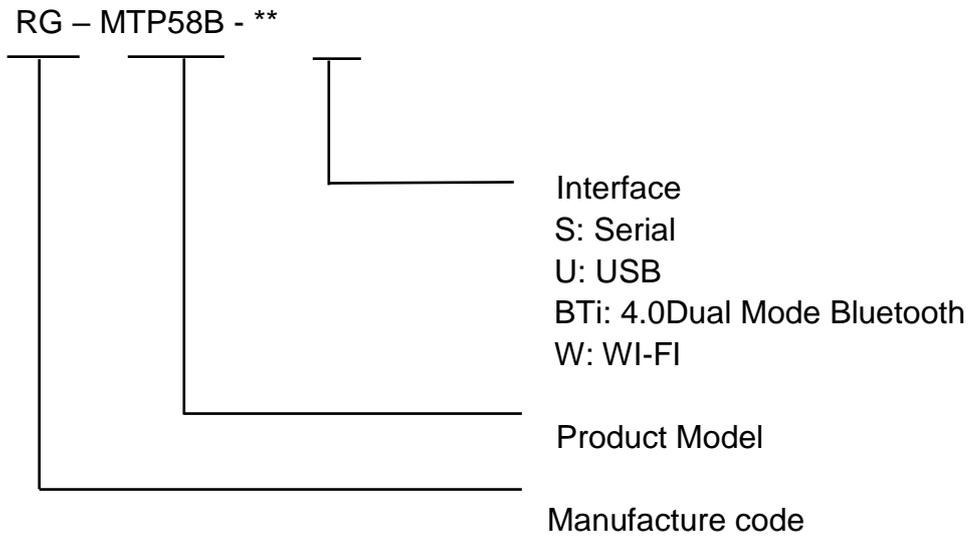


**【BATTERY】** : Battery indicator **【MODE】** : Mode indicator

**【ERROR】** : Error indicator

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

## 1.2 Model



RG-MTP58B-SU      Support serial and USB  
RG-MTP58BBT- SUBTi Support serial, USB, 4.0 Dual Mode 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℃~50℃  
Working Humidity:10%~80%  
Storage temperature: -40℃~70℃  
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 battery slot.
2. Place the battery cover and lock it.

#### 3.1.2 Loading Paper Roll

1. Hold the cover on both sides, open the paper case cover
2. Put a new paper 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, and tear off the excess paper.

### 3.2 Basic Function Operation

#### 3.2.1 Power On

After hold **【POWER】** for one second, printer **【MODE】** lights, and beeps , 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.

Enter 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 an enter notice receipt.

Exit hex printing: Power off or press FEED button 3 times, printer will exit hex printing mode, and print an exit notice receipt.

### 3.2.6 Enter Firmware 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

Another quick way to enter into firmware upgrade mode: In power off mode, first hold FEED button, then power on the printer, when ERROR indicator lights, release FEED button immediately. Then the printer enters into the firmware upgrade mode. In this mode, ERROR indicator flashes each 2-second.

Notice: It requires the professional tools to upgrade the firmware, you can get from your provider.

### 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, the battery power indicator (red) will flash, users need to recharge the battery at this moment.

Battery charging method: Connect the printer and battery charger by the power port. When charging, printer BATTERY indicator flashes in the turn of 3 colors. When full-charged, BATTERY indicator is green. The whole charging time is about 2.5 hours.

If the printer is on working when charging, the charging time will be prolonged.

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

## 3.3 Printer Parameter Settings

User can use RG-SetTools by PC to setup the printer's parameters, such as language, font, print density, default codepage, printer Bluetooth name and password etc. The details please refer to RG-SetTools User Manual.

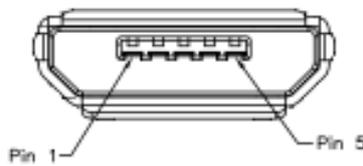
### 3.4 Printer Connection and Print

#### 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

In serial connection, user can set baud rate and data structures by “RG-SetTools”. 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 not 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 not 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

The devices, such as hand-held device, laptop and other handheld data terminal with Bluetooth can drive RG-MTP58B to print by Bluetooth. RG-MTP58B is compatible with Bluetooth4.0 standard(4.0 includes 2.0,3.0 and BLE). Power class is CLASS 2, effective communication distance is 10m. The Bluetooth of the printer belongs to the slave device. The initial name of the printer is RG-MTP58B, the initial password is '1234'; users can change the printer name and password by using RG- SetTools. Please see the details in RG-SetTools User Manual.

The mobile printer need to pair with host device Bluetooth 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-MTP58B
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 must be kept power on.
- b. When the Bluetooth of printer and host device are well-paired, printer Bluetooth will not be available for other host device connection till the printer Bluetooth disconnected from the paired host device
- c. After well-pairing, printer MODE indicator 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,

When use WI-FI interface for first time, it requires to configure it according to Chapter V in details.

### 3.5 Indicator and Buzzer Description

The printer has three indicators: 3-color BATTERY, green MODE, and red ERROR indicators.

The definition of the indicator as below:

**【MODE】** Indicator:

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】** Indicator:

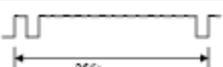
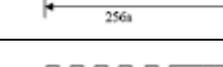
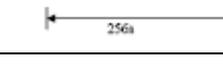
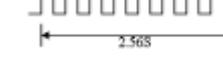
Long lit: printer is out of paper

Flash: Printer appears error. Different flashes, different errors.

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

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

**【BATTERY】** indicator:

Power indicator has 3 colors, to indicate battery charge status

Green: Full power

Blue: Medium power

Red: Low power

Red light flash: low power, need to recharge right away

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

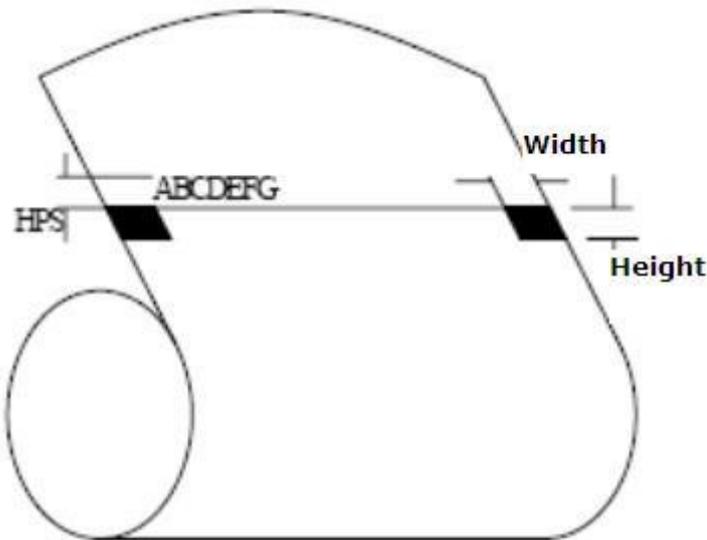
### 4.1 Technical Manual

REGO Thermal Printer Technical Manual is used to support the developers to develop the application with RG-MTP58B, this manual can be obtained from the REGO.

### 4.2 Pre-printed Black Mark Description

If user use pre-print black mark to locate the receipt, please be sure to abide by the following black mark pre-print regulation when print the black mark paper, if not ,it will cause that the printer can not identify the black mark.

The black mark pre-print regulations are as below:



Printing Position: As the picture above, the black mark should be printed on the right or left edge of the side of words.

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

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

Reflectivity of infrared ray :  $< 10\%$  (infrared ray reflectivity of other parts of the black mark paper is  $> 65\%$ )

HPS: it is the distance between edges of black mark and loading position.

$4.5\text{mm} \leq \text{Hps} \leq 6.5\text{mm}$

## 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.

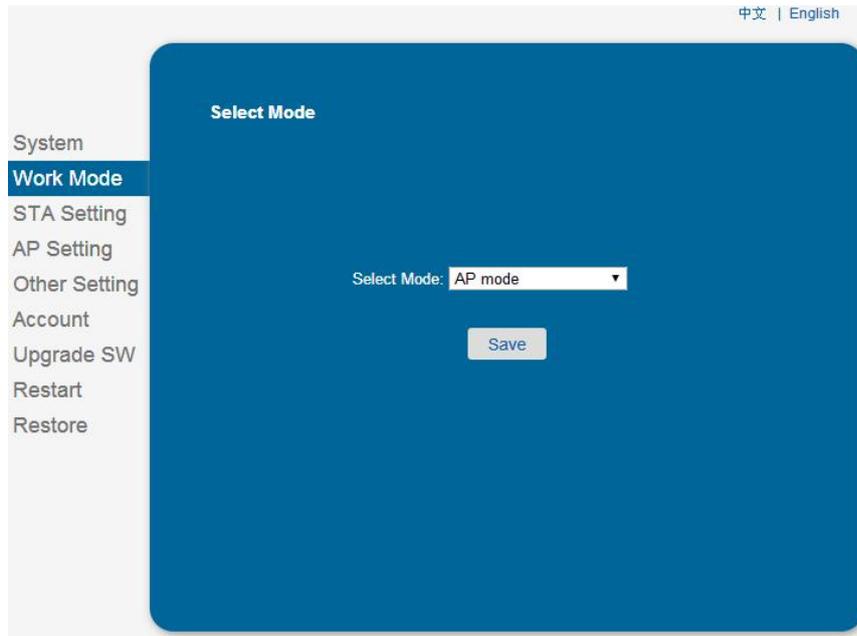


MID	RG-MTP58B
Software Version	V1.3.02
WiFi Work Mode	AP
AP mode	
SSID	RG-MTP58B
IP Address	192.168.1.1
MAC Address	ACCF232081E1
STA Mode	
Router SSID	
Signal Strength	
IP Address	
MAC Address	

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.



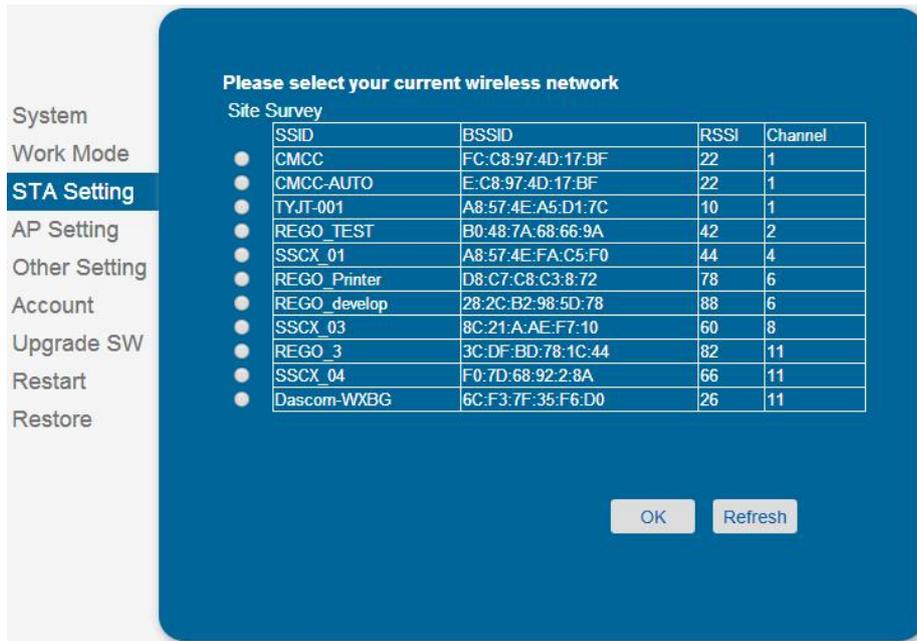
Pic. 5-3 Work Mode selection page

### 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.



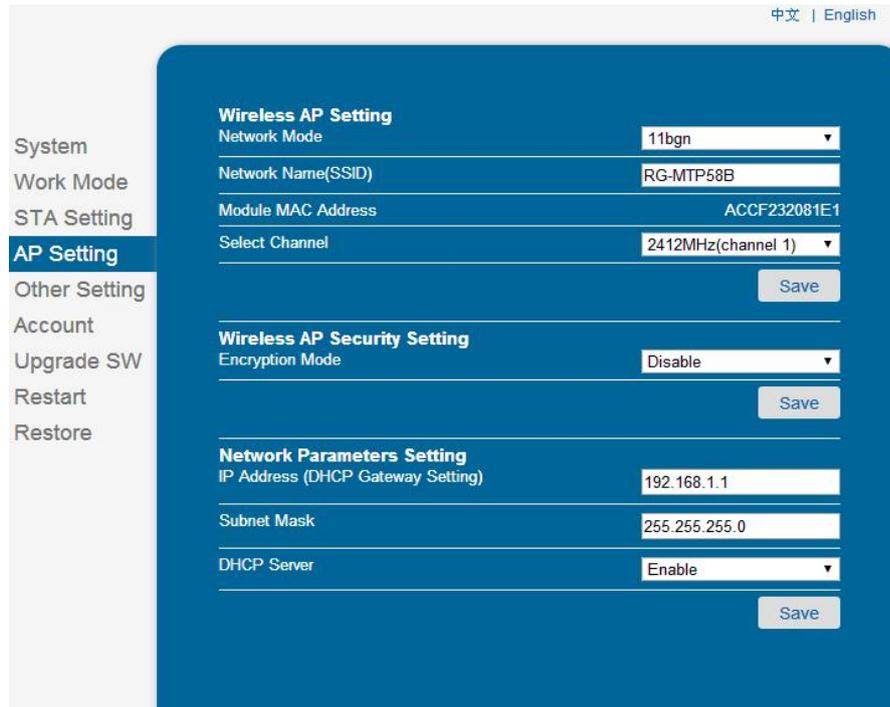
Pic. 5-4 STA settings page



Pic. 5-5 STA web search user router page

### 5.1.5 AP Settings Page

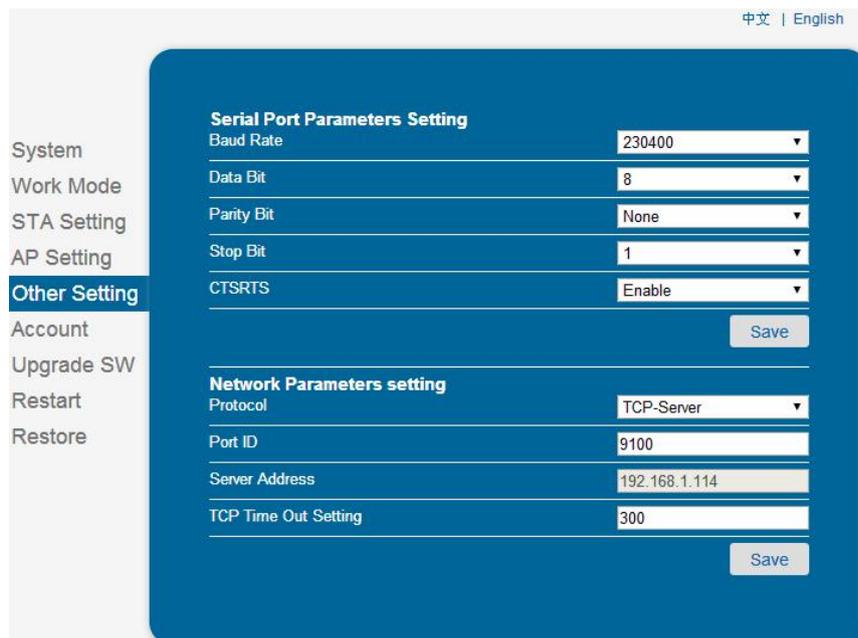
When select the printer working in AP or AP + STA mode, users need to set up wireless and network parameters on this page. Most systems support DHCP to automatically obtain IP. It is recommended to set the LAN DHCP parameter type as "Server", otherwise STA need to manually enter the appropriate network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

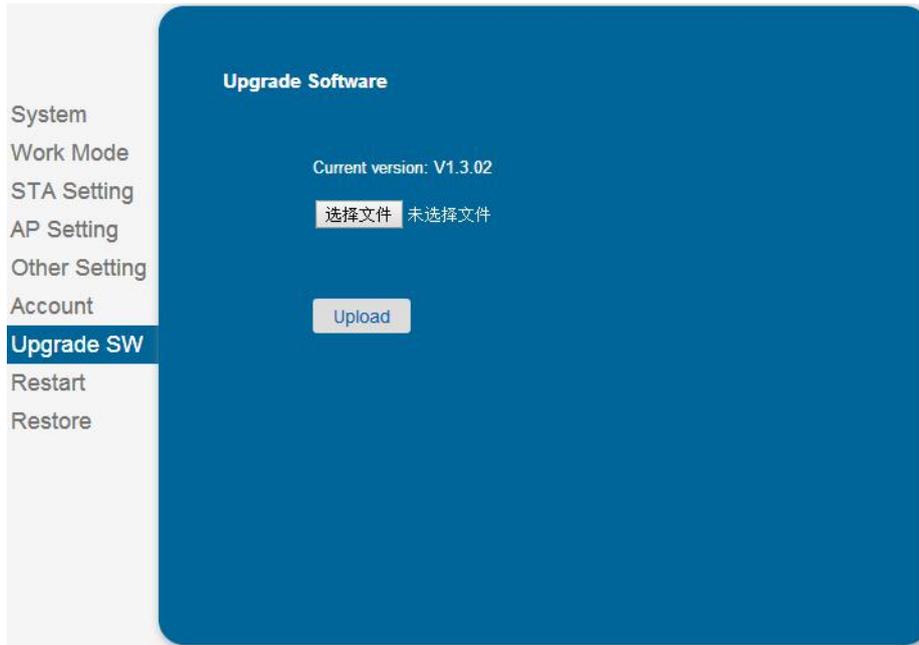
Save

中文 | English

Pic. 5-8 Account management page

### 5.1.8 Software Upgrade Page

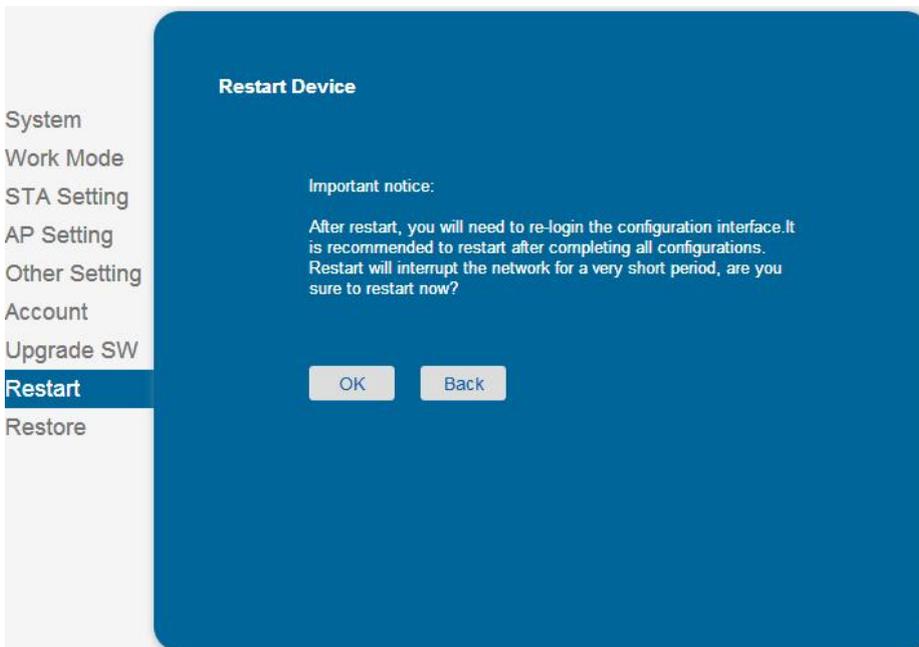
Users can update the firmware file on the local computer to upload the WI-FI modules firmware. Please consult our technical staff for detailed upload methods. If not really need to upgrade firmware, please do not arbitrarily set, or it may damage the module.



Pic. 5-9 Software upgrade page

### 5.1.9 Module Reset Page

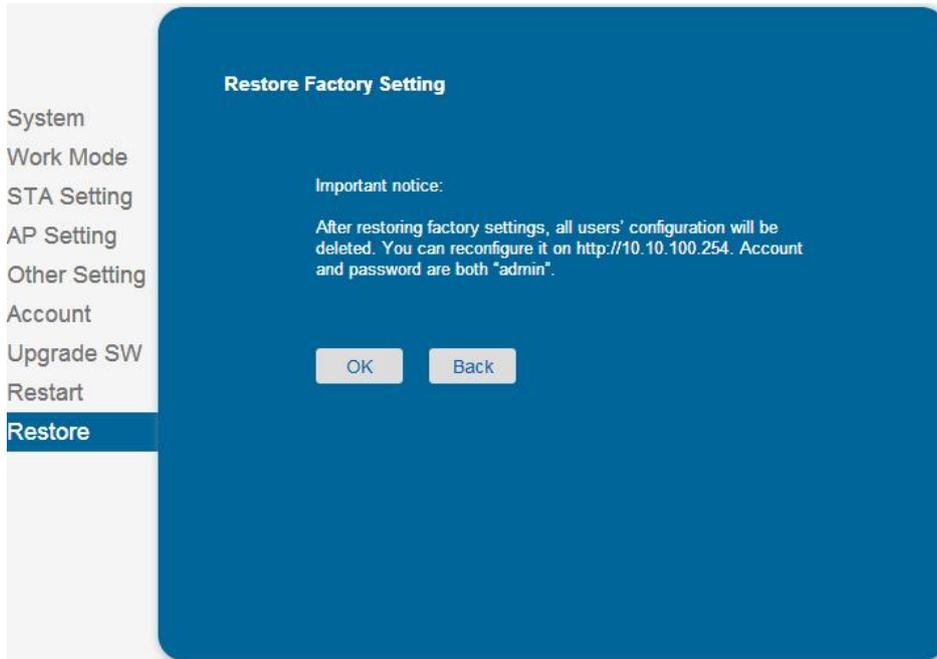
After the restart, newly saved configuration parameters will be used.



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

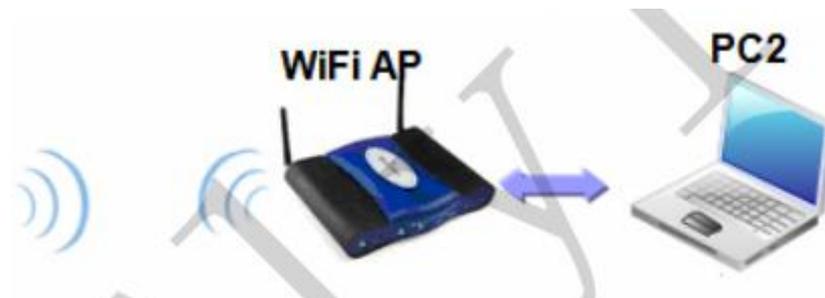
### 5.2.1 Software Debugging Tools

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

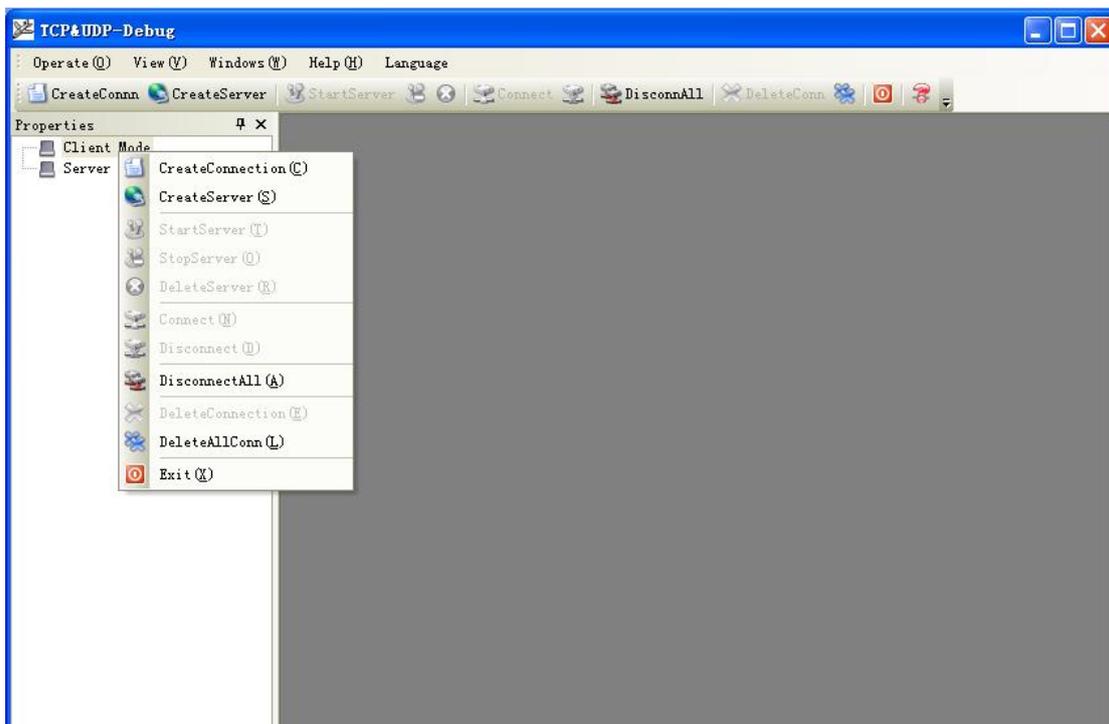
Printer default encryption: open, none

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;

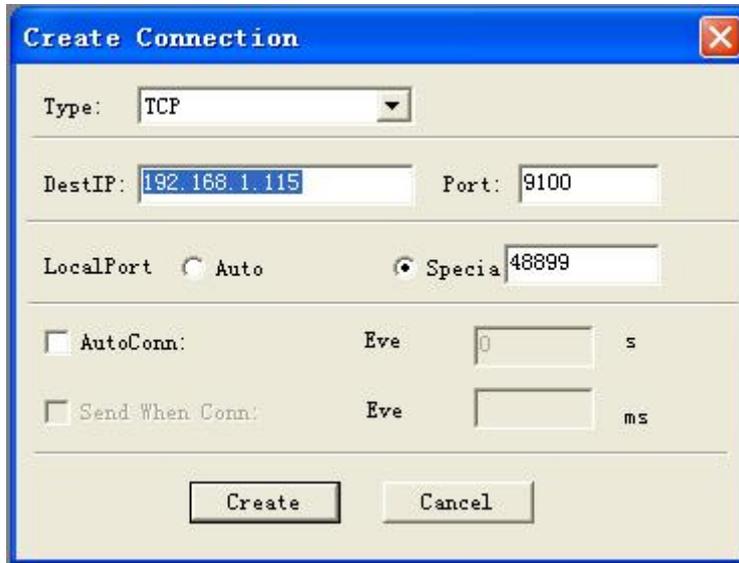
### 5.2.4 Printer Test

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.



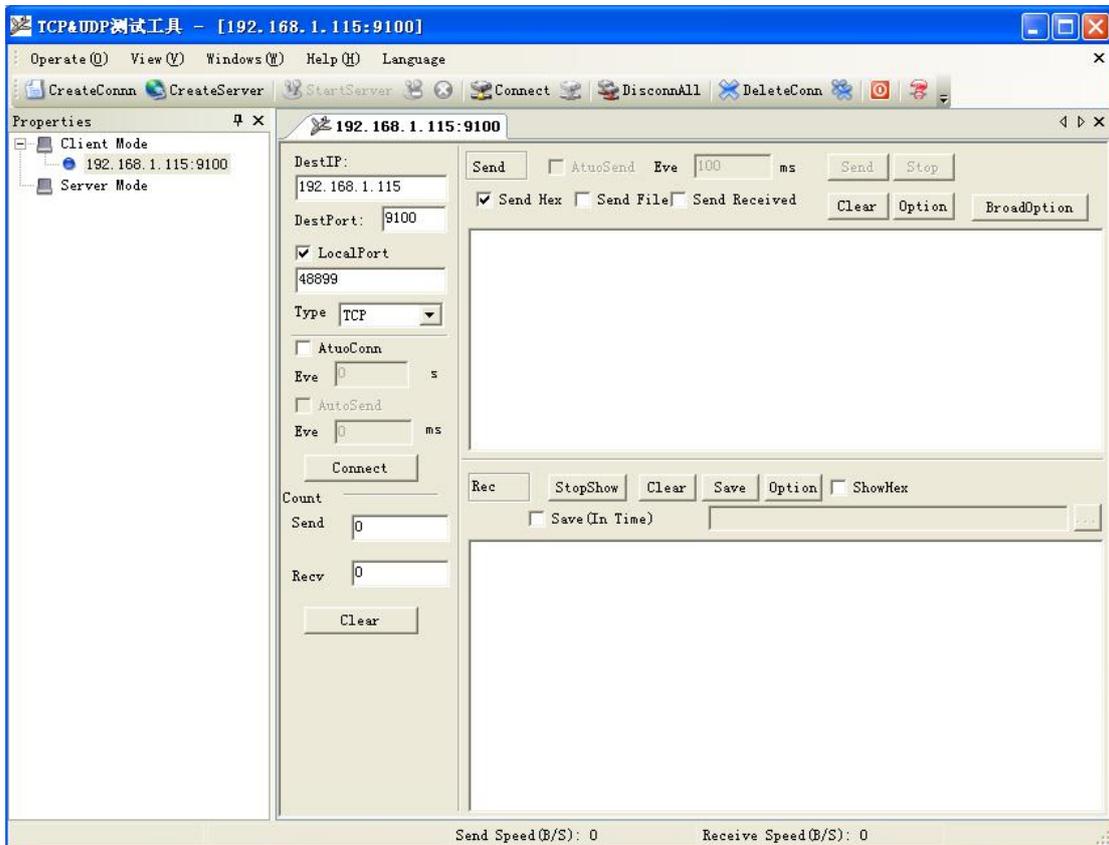
Pic. 5-14“TCPUDPDbg” Create connection

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



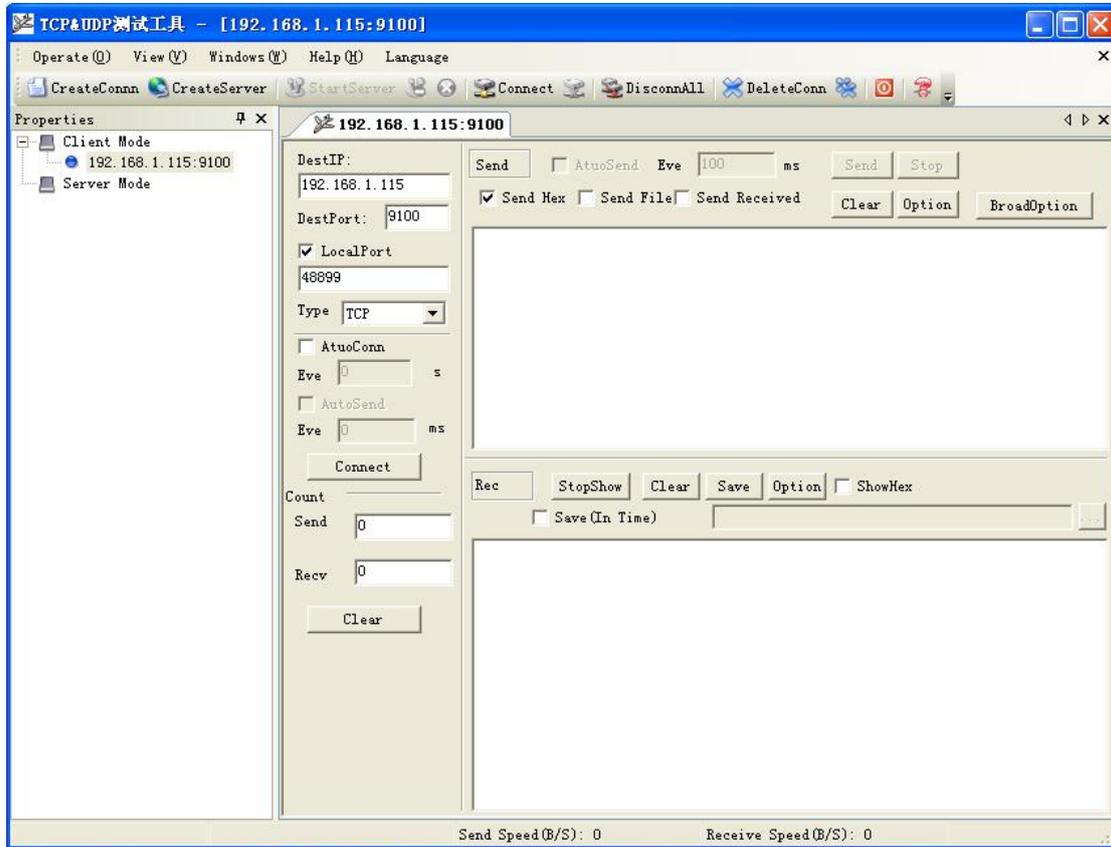
Pic. 5-15“TCPUDPDbg” configuration

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