



TMG15 USER MANUAL

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TMG15 User Manual

1. Preface

This guide provides the user with an overview of the features available on the TMG15.

2. Introduction

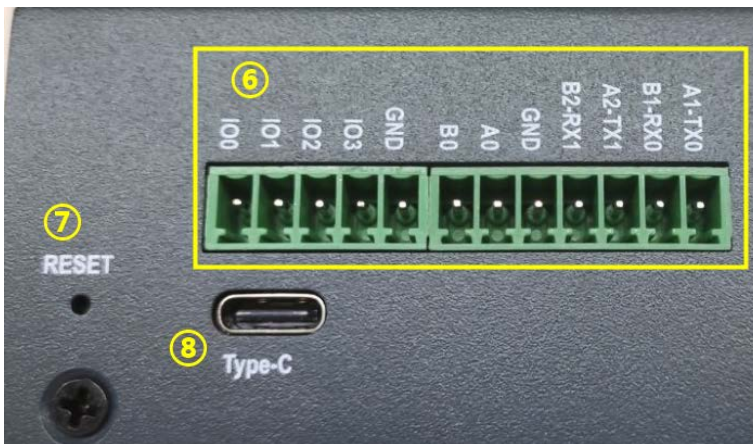
TMG15 is an industrial edge gateway. It has a built-in Ubuntu system for diverse secondary development. It supports 4G, Ethernet and WiFi communication. The hardware comes with configurable RS485, RS232 and digital GPIOs, which can be used for Modbus data collection and reporting in industry and superstores.

3. Interface introduction

- ① 4G antenna interface. Connect an antenna with 4G marked at the bottom.
- ② WiFi antenna interface. Connect an antenna with 2.4G marked at the bottom.
- ③ Power supply interface, DC 9-24V. Use the attached DC power supply adapter.
- ④ Ethernet interface. This port corresponds to eth0, with the default IP address of 192.168.3.105 .
- ⑤ USB interface.
- ⑥ Data acquisition interface.

COM name	Software node name	Type	silk-screen
COM0	/dev/ttyS0	RS485	A0 、 B0
COM1	/dev/ttyS3	RS485	A1-TX0、 B1-RX0
COM2	/dev/ttyS5	RS232	A2-TX1、 B2-RX2、 GND

- ⑦ Reset button. Clicking the reset button will cause the device to power down and reboot.
- ⑧ The type-c debugging interface. Debug through the ADB shell.
- ⑨ SIM card slot. Press the small yellow hole next to it, you can pop up the card slot.
- ⑩ TF card slot.





4. Web login

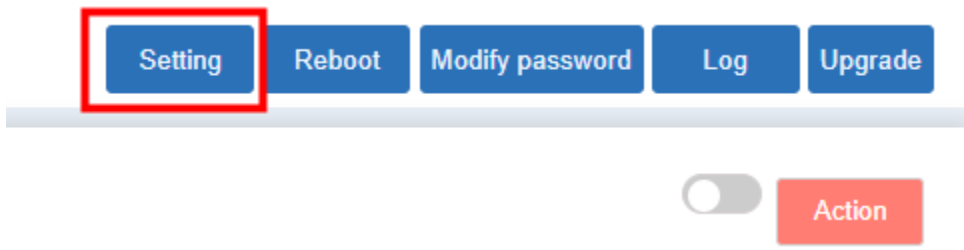
The default IP address of the gateway LAN1 is 192.168.3.105.

Use the network cable to connect the LAN port of the gateway to the PC. Modify the static IP address of your PC. Keep the computer IP in the same network segment as the gateway(**192.168.3.xxx**).

Open the 192.168.3.105 web page in the PC's browser.

Log in with the username **admin** and the factory password **123456**.

After logging in, you can set the IP and WiFi of the gateway in the Setting option in the upper right corner of the web page.



Log in to the homepage and click on the Setting button in the upper right corner of the page to access the Settings page.

In the Network Parameters column, you can set the IP parameters for Ethernet, 4G network, and WiFi network.

5. Setting page

Ethernet 1

The Ethernet 1 interface corresponds to the wired network to which the device is connected. By selecting Static IP in the DHCP option, you will be able to specify the IP parameters of the device. The device supports adding multiple static IPs for different network segments. It is recommended to always keep a static IP for logging into the command terminal. When DHCP mode is selected, the added static IP will be invalid. The device will try to obtain an IP automatically. we recommend using a static IP for wired networks. DHCP mode is recommended for 4G and WiFi networks.

Subnet mask is a specialized network communication parameter, please set the legal value according to the general specification.

Only one default gateway can be set per network interface. When multiple static IPs are added, please do not set the default gateway repeatedly to avoid conflicts.

Metric

An integer value (in the range of 1 to 9999) that specifies the number of leaps required for a route, which is used to select the route that best matches the destination address in the forwarded packet among multiple routes in the routing table. The smaller the value the higher the priority. The default route's Metric value will be set to 100.

You can change which network port the device uses to access the network by modifying the Metric value.

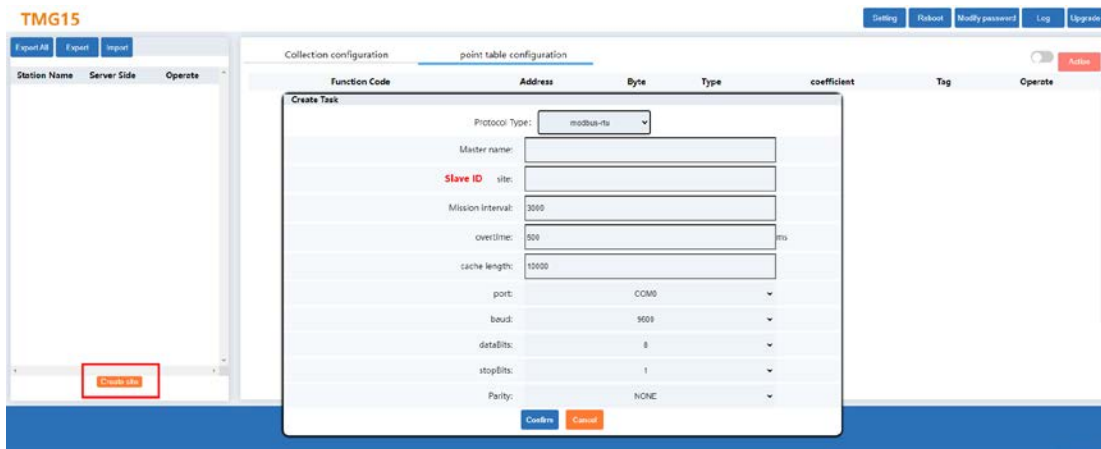
WiFi

In the WiFi Parameters column of the Settings page, you can search for WiFi signals and choose to connect. After adding the correct WiFi password, the device will automatically try to connect. Whether the device uses a WiFi network depends on the settings in the Network Parameters field. You can make the device automatically switch to a network with a smaller Metric value by adjusting the Metric value for each interface.

APN configuration

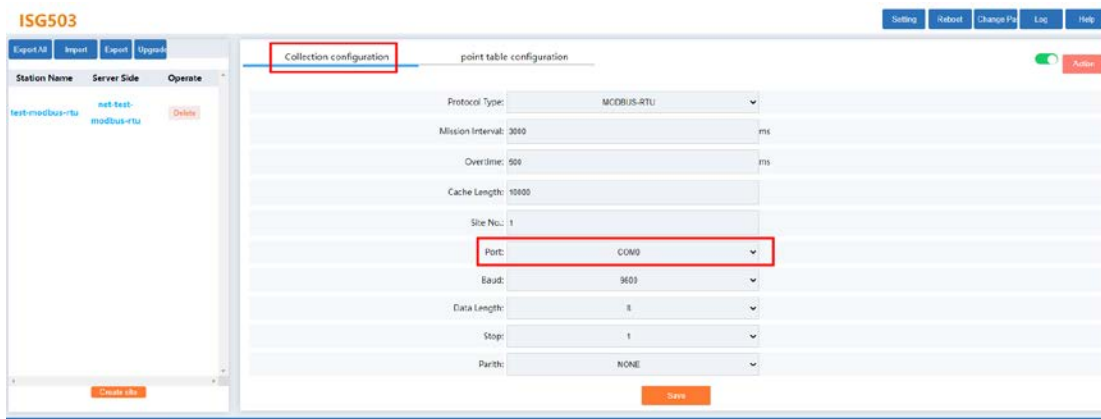
In the APN Configuration field of the Settings page, you can view and modify the APN information of the device.

6. Modbus setting



Click on the Create site in the lower left corner of the page, and the web page will display the parameter configuration interface.

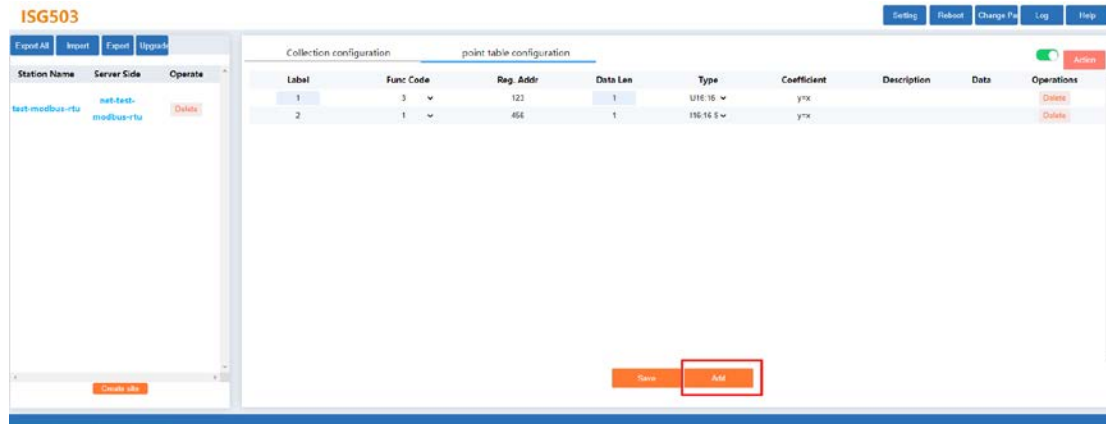
The figure above shows the parameter settings of the Modbus RTU.



After completing the Modbus parameter setting and saving, please click Collection configuration to see if the setting is correct. Select the corresponding COM port

number according to the port connected outside the gateway. Site Number corresponds to the Modbus slave ID.

If there are no options in the port drop-down box, click the Reboot in the upper right corner of the page to restart the gateway.



Click “point table configuration” and through the “Add” button, you can add the Modbus register address you want to read. Save and click on the “Action” in the top right corner of the web page. After clicking the Activate button, the service restarts to load the configuration file. The gateway will send the command at the interval you set and display the read data on the web page. Data sending can be turned on or off by clicking the slide switch in the upper right corner and tapping the Save button.

7. Linux entry

With the username **tmx**, and the password **root**, you can log in to the Linux system of the gateway. The password to get the root permission is **root**.

There are two ways to log in.

Way 1: Use of the ADB shell tool. You need to connect the gateway with the PC using the type-C data cable. When the ADB connection fails, power down the device, turn it back on, and try to connect again.

Way 2: Log in through the SSH session. Establish SSH session with IP address 192.168.3.105, after connecting the gateway to PC. You can also add a new static IP to the gateway to enable other PCs on the same LAN to establish an SSH session with the gateway through this new IP. Please always reserve a static IP for SSH access.

In the gateway's Linux system, you can install and use third-party software or run your own developed software.

8. Linux General Knowledge Introduction

The Linux system version built into the device is Ubuntu 20.04. The device's terminal commands and file configuration follow regular Linux rules.

Network Profile

The file where the system configures the network information is **/etc/netplan/01-network-manager-all.yaml**. The eth0 port in the yaml file corresponds to Ethernet, the usb0 port corresponds to the 4G network, and the wlan0 port corresponds to the WiFi network.

The modification of yaml files and the use of netplan are described in detail on the official website, please refer to the link below.

<https://netplan.readthedocs.io/en/stable/howto/>

After the changes are complete, run the command: **sudo netplan apply**, to make the changes take effect.