

### Key Features

- Global 5G NR, 4G LTE to choose<sup>1</sup>
- 2-SFP, 8-RJ45(GbE, 4-PoE, optional), 2-RS485, 3-DI, 3-Relay, WIFI(Optional), 2-DC power output(24V, 12V, optional)
- OpenWRT based Linux OS, Python, C/C++ programmable<sup>2</sup>
- Wide operating temperature: -35~+75 ° C
- Modbus RTU/TCP, MQTT, JSON, TCP/UDP, and customized industrial protocols for smart pole.
- VPN, SNMP, BGP, HTTP, Telnet, SSH, CLI, SPI firewall
- Wall mounting



### Introduction

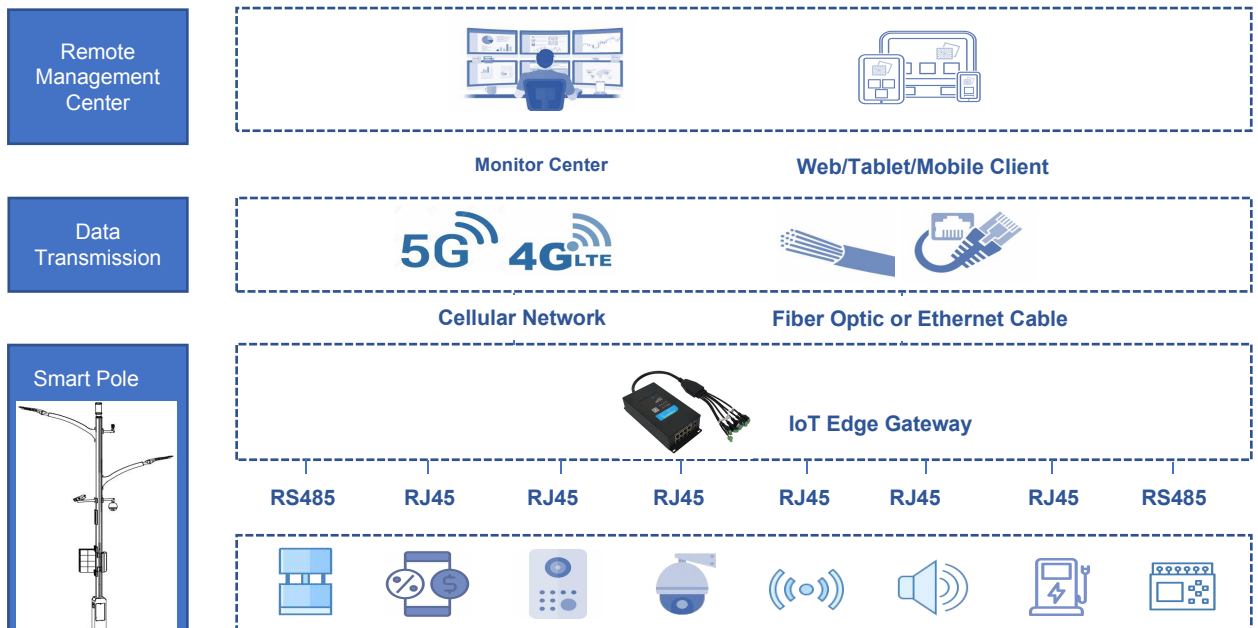
The TG473 is a 5G/4G LTE gigabit IoT gateway designed for smart poles. It integrates data acquisition, network routing and switching, lighting control, and edge computing functionalities, along with rich protocols such as VPN, Modbus RTU/TCP, MQTT, etc.

It supports 5G/4G, 2-fiber optic ports (SFP), 1-WAN, 7-LAN (4-PoE, option), 2-RS485, 3-DI, 3-Relays, 1-TF card slot, 2-DC power outputs (24V/12V, option), and Wi-Fi (option). Thanks to its diverse interfaces and protocols, smart pole developers can easily integrate various equipment and systems into one gateway. Systems like smart lighting, IP cameras, environmental sensors, WiFi access points, LED displays, IP speakers, emergency intercoms, and charging stations can be seamlessly integrated, simplifying the entire smart pole system.

Furthermore, the TG473 provides an OpenWRT-based Linux OS embedded environment that enables IoT developers and engineers to program and install their own applications using Python, C/C++ for the hardware.

The TG473 facilitates quick access to high-speed internet and ensures secure and reliable data transmission. It has found widespread applications in smart pole scenarios, including smart cities, municipal areas, parks, highways, tunnels, scenic areas, industrial parks, and themed towns.

### Applications



# Specifications

## System

- CPU 32-bit, dual core
- Flash 32MB
- RAM 256MB

## Cellular Interfaces

- Antenna 4 × 50 Ω SMA Female(5G Version TG473-NR)
- Connector 2 × 50 Ω SMA Female(4G Version TG473-LF)
- SIM Slot 1
- ESD Protection 15KV

## Fiber Port

- Ports 2\*100/1000Base-X SFP

## Ethernet Interface(4-PoE, optional)

- Ports 8-RJ45 (1-WAN, 7-LAN, 4-PoE, option)
- Data Rates 10/100/1000 Mbps (Auto-Sensing), Auto MDI/MDIX
- ESD Protection 1.5KV

## Serial Interfaces

- Connector Terminal block, 3.5 mm female socket
- Ports 2-RS485
- Baud Rate 300bps to 230400bps
- ESD protection 15KV

## I/O

- Connector Terminal block, 3.5 mm female socket with lock
- Digital Input 3-DI (0-30V Input)  
Status "0": 0-3V, status "1": 5-30V
- Relay Output 3-Relay (Up to 5A and 30VDC/250VAC switch)
- Power Output 24VDCx1, 12VDCx1

## Wi-Fi(Optional)

- Antenna Connector 1 × 50 Ω RP-SMA Female
- Standard IEEE 802.11b/g/n, AP and Client modes
- Security Open, WPA, WPA2, WPA/WPA2 Enterprise, Radius

## Power Supply and Consumption

- Connector Terminal block, 3.5 mm female socket
- Standard Power DC 12V/1.5A (PoE requires 48V, 2A)
- Input Voltage 5-60 VDC

## Software

- Network Protocols PPP, PPPoE, SNMP v1/v2c/v3, TCP, UDP, DHCP, RIPv1/v2, OSPF, BGP, DNS, DDNS, HTTP, ARP, QoS, SNTP, Telnet, SSH
- Serial Port MQTT broker/client, Transparent (TCP/UDP Client/Server), Modbus RTU/Modbus TCP
- VPN Tunnel IPsec/PPTP/L2TP/GRE/OpenVPN
- Firewall ACL/DMZ/Port Mapping/MAC Binding
- Management Web, CLI, SMS, Cloud DMP (Device Management Platform)<sup>3</sup>
- Reliability WWAN and WAN Failover, Hardware & Software Watchdog
- Secondary Development OpenWrt based Linux OS, C/C++, Python SDK

## Physical Characteristics

- Ingress Protection IP30
- Housing Metal
- Dimensions 200x113x50mm (7.87 x 5.12 x 1.97in)
- Mounting Wall mount

## Environmental

- Operating Temperature -35° C to +75° C (-31°F to +167°F)
- Storage Temperature -40° C to +80° C (-40°F to +176°F)
- Relative Humidity 5% to 95% (non-condensing)
- Ethernet Isolation 1.5 kV RMS

## Others

- Reset Button 1
- LED Indicators SFP, System, Power, GPS, WIFI, 5G/4G, Alarm
- Built-in Watchdog, RTC, Timer
- Warranty Period<sup>4</sup> Standard: 12 Months; Extended: 2-5 Years

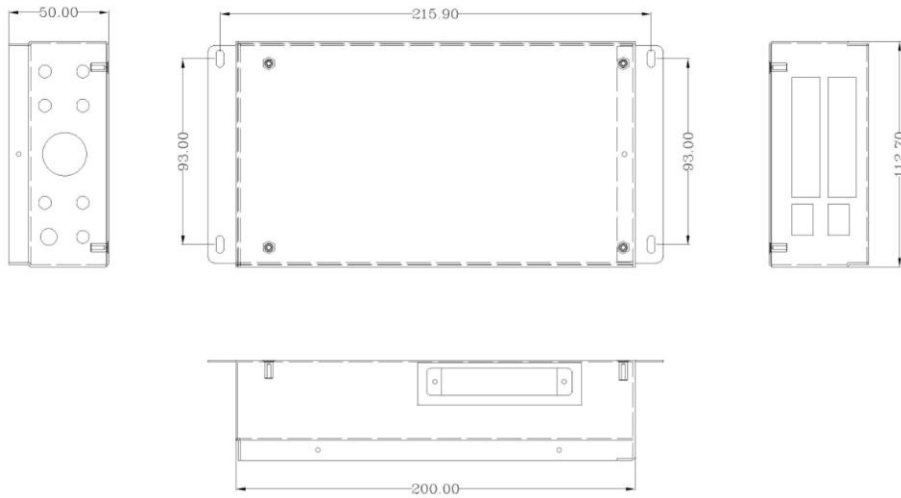
## Standard Package Content

- |                                                         |                                        |
|---------------------------------------------------------|----------------------------------------|
| 1. TG473 Gateway                                        | 1 PCS                                  |
| 2. Mag-mount Cellular Antenna (SMA Male, 1 meter, 5dBi) | 5G Version: 4 PCS<br>4G Version: 2 PCS |
| 3. Ethernet Cable(1 meter)                              | 1 PCS                                  |

# Order Information

Model	Part Number	Description	Frequency Band <sup>5</sup>
TG473-NR	TG473 - N<1> - <2>	5G Gateway, 8-GbE, 2-RS485, 3-DI, 3-Relay	5G NR Sub-6 <ul style="list-style-type: none"> <li>• n1/n2/n3/n5/n7/n8/n12/n20/n28/n41/n66/n71/n77/n78/n79</li> <li>• LTE FDD: B1/B2/B3/B4/B5/B7/B8/B9/B12/B13/B14/B17/B18/B19/B20/B21(TBD)/B25/B26/B28/B29/B30/B32/B66/B71</li> <li>• LTE TDD: B34/B38/39/B40/B41/B42/B43/B48</li> </ul>
TG473-LF	TG473 - L<1> - <2>	4G Gateway, 8-GbE, 2-RS485, 3-DI, 3-Relay	4G LTE CAT 4 <ul style="list-style-type: none"> <li>• EMEA/Asia: B1/B3/B5/B7/B8/B20/B38/B40/B41</li> <li>• ANZ/LATAM: B1/B3/B5/B7/B8/B28</li> <li>• NA: B2/B4/B5/B12/B13/B14</li> </ul>
<1>: 5G or 4G module for different countries and regions <2>: W=2.4G Single band WIFI			

## Dimensions



Dimensions(200x113x50mm)

## Pictures



### Note:

1. There are different modules for different regions to choose.
2. Bivocom provides complier and SDK for customers to do their second development, and Python, LUA is a customized firmware.
3. There has a license fee for DMP.
4. Price of the extended warranty will be different.
5. If you couldn't find the frequency band for your regions or have any questions, please contact Bivocom sales representatives for more information.
6. To save the earth, Bivocom doesn't print the user guide, if you need it, please go to Bivocom website to [download](#).