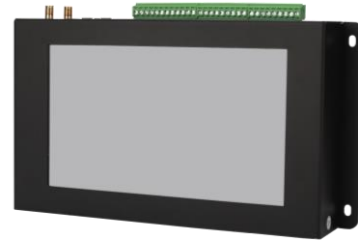




TG462



TG462S



### Introduction

### Extend your IoT analytic at the edge network

The TG462/TG462S Industrial cellular IoT Edge Gateways are designed for connecting diverse industrial sensors and controllers to cloud via 4G LTE/3G cellular network, which is suitable for IIoT and M2M applications that require secure and rugged LTE connectivity in harsh environment, such as water&waste water, gas&oil, industry 4.0, smart city, environment, etc.

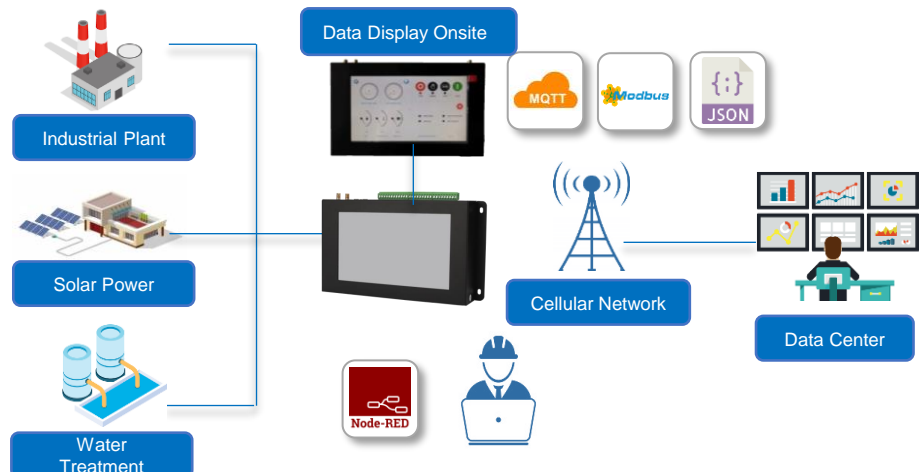
With rich interfaces, such as ethernet ports, RS232/RS485, digital inputs, analog inputs, relay outputs, I2C, power output, USB, GNSS, WIFI, etc., The TG462/TG462S Edge Gateways allow users to integrate legacy systems with modern sensors. With high-performance 32-bit ARM-based CPU, Modbus RTU/TCP, MQTT, TCP/IP, and customized industrial protocols, as well as up to 1GB flash and 32GB micro SD local data storage, enables users to collect, store and process data at IoT edge network. Besides, TG462S is embedded with a 7 inch HD TFT touch screen provides a better user experience for field data display and maintenance. In addition, the 4G LTE and VPN provide ample bandwidth and secure connectivity for transferring field data to remote server.

TG462/TG462S is designed based on OpenWrt Linux OS, allows the developers to install their own application based on Node-Red, C/C++, Python or LUA with Bivocom SDK and API<sup>1</sup>, easy and quickly help you to bring your IoT concept to reality .

### Key Features

- 1 High-performance 32-bit ARM based CPU, and operational temperature ranges from -35 °C to +75 °C, providing a rugged system for running 24x7 in harsh environment
- 2 Rich I/O and protocols, suitable for the mainstream sensors and controllers; 1-WAN, 1-LAN, USB, 4-RS232, 3-RS485, 1-I2C, 1-TTL, 8-ADC, 4-DI, 4-DO, 5-Power Output, TF card slot, WIFI, GNSS
- 3 7 inch HD touch screen<sup>2</sup>, easy for local real time and historic data query, system or equipment configuration and maintenance
- 4 OpenWrt based Linux OS, provides Node-Red, QT, C/C++, Python programming environment, flexible for secondary development, and OEM/ODM are available for equipment manufacturers
- 5 LTE CAT 4 upload speed of up to 50Mbps and download speed up to 150Mbps providing ample bandwidth for high data demand applications
- 6 Large capacity of local data storage with flash up to 1GB, and additional Micro SD card up to 32GB

### Applications



# Specifications

## System

- CPU 32-bit ARM Cortex A7
- Flash 1GB
- Memory 256MB DDR3

## LCD Screen

- TG462S 800\*480, 7" TFT Touch Screen

## Cellular Interfaces

- Antenna Connector 2 × 50 Ω SMA Female
- SIM Slot 1
- ESD Protection 15KV

## Ethernet Interface

- Ports 2-RJ45 (1-WAN, 1-LAN or 2-LAN configurable)
- Data Rates 10/100 Mbps (Auto-Sensing), Auto MDI/MDIX
- ESD Protection 1.5KV

## Serial Interfaces

- Connector Terminal block, 3.5 mm female socket with lock
- Ports 4-RS232(1 for debug), 3-RS485
- Baud Rate 300bps to 230400bps
- ESD protection 8KV for RS232, 15KV for RS485

## I/O

- Connector Terminal block, 3.5 mm female socket with lock
- Digital Input 4-DI (0-30V Input)  
Status "0": 0-3V, status "1": 5-30V
- Relay Output 4-Relay (Up to 5A and 30VDC/250VAC switch)
- Analog Input 8 x 12-bit ADC, supports 4-20mA input(Default), or 0-5V input(Option)
- I2C 1, for temperature, humidity sensors
- TTL 1
- Power Output 5 (3-channel 12V output, 1- channel 9V output, rated current 1A, 1-channel 5V output, rated current 1A)  
Built-in overcurrent protection, for external devices DC power input

## Wi-Fi(Optional)

- Antenna Connector 1 × 50 Ω RP-SMA Female
- Standard IEEE 802.11b/g/n, AP and Client modes
- Transmission Rate IEEE802.11b/g: Up to 54Mbps  
IEEE802.11n: Up to 300Mbps
- Security Open, WPA, WPA2, WPA/WPA2 Enterprise, Radius
- Tx Power 18dBm (11g), 21dBm (11b)
- Rx Sensitivity <-72dBm@54Mbps

## GNSS/GPS (Option)

- Module Built-in independent GPS Module, or GNSS from cellular module
- Antenna Connector 1 × 50 Ω SMA Female

## External Storage

- SD Card Slot 1x Micro SD interface, Up to 32G
- USB 1 x USB2.0
- Usage User Program, Data Storage and Firmware Upgrade

## Power Supply and Consumption

- Connector 4-pin with 3.5 mm terminal block
- Standard Power DC 12V/1.5A
- Input Voltage 5-35 VDC
- Data Acquisition 251 ~ 357mA@12VDC
- Communication 305 ~ 412mA@12VDC

## 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, Transparent (TCP Client/Server, UDP Client/Server), Modbus Gateway (Modbus RTU to 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, Node-Red, QT, C/C++, Python, LUA and SDK

## Physical Characteristics

- Ingress Protection IP30
- Housing & Weight Metal  
TG462: 850g(1.87lbs),  
TG462S: 900g(1.98lbs), without accessories
- Dimensions 228×122.5×38.2mm(8.97x4.82x1.50in)
- Mounting Desktop, 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

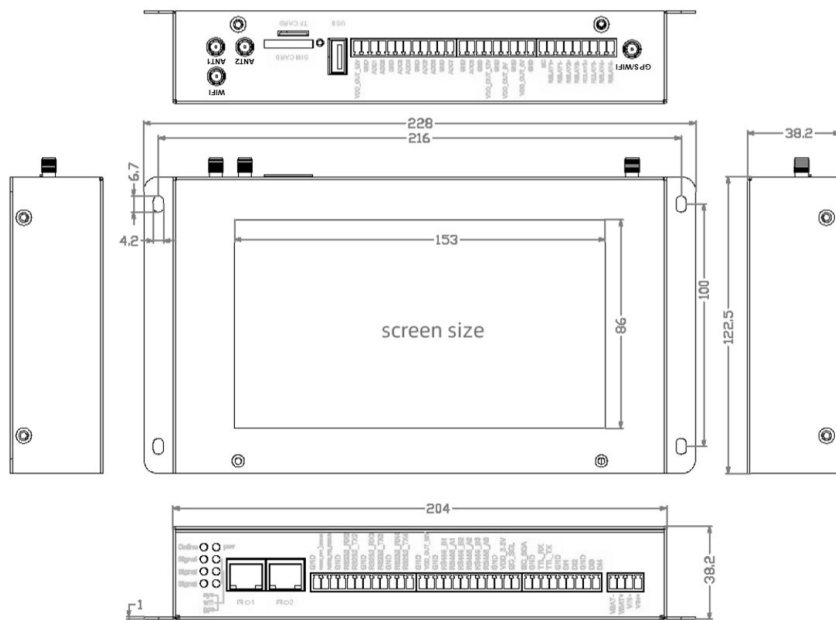
- Reset Button 1
- LED Indicators LED Indicators Signal strength, WIFI, System, Online, Power, GPS\*
- Built-in Watchdog, RTC, Timer
- Approvals<sup>4</sup> CE\*, RCM\*, FCC\*, NBTC\*
- Warranty Period<sup>5</sup> Standard: 12 Months  
Extended: 2-5 Years

## Standard Package Content

- |    |   |       |
|----|---|-------|
| 1. | TG462 Gateway   | 1 PCS |
| 2. | Power Adapter(DC 12V/1.5A, EU/US/UK/AU plug optional) | 1 PCS |
| 3. | Mag-mount Cellular Antenna (SMA Male, 1 meter, 5dBi)  | 2 PCS |
| 4. | RS232 Cable (DB9 Female, 1 meter)                     | 1 PCS |
| 5. | Ethernet Cable(1 meter)                               | 1 PCS |
| 6. | 12-Pin Terminal Block                                 | 3 PCS |
| 7. | 9-Pin Terminal Block                                  | 3 PCS |
| 8. | 4-Pin Terminal Block                                  | 1 PCS |

## Order Information

Model	Part Number	Description	Frequency Band <sup>6</sup>
TG462	TG462 - <1> - <2>	Edge Gateway, 2-RJ45, 4-RS232(1 debug), 3-RS485, 4-DI, 4-DO, 8-ADC, 1-I2C, 1-TTL, 5-Power Output, 1-USB, 1-SD	4G LTE CAT 4 • EMEA/Asia: B1/B3/B5/B7/B8/B20/B38/B40/B41 • ANZ/LATAM: B1/B3/B5/B7/B8/B28 • NA: B2/B4/B5/B12/B13/B14 3G/WCDMA/UMTS/HSPA+: • 800/850/900/1900/2100
TG462S	TG462S - <1> - <2>	Touch Screen Edge Gateway, 2-RJ45, 4-RS232(1 debug), 3-RS485, 4-DI, 4-DO, 8-ADC, 1-I2C, 1-TTL, 5-Power Output, 1-USB, 1-SD	
<1>: Module for different cellular network, countries and regions <2>: W=WIFI G=GPS(standalone GPS), GN=GNSS from cellular module 1=1GB Flash			



## Related Products

### IoT Edge Gateway TG452 Series



- ✓ ARM based CPU
- ✓ OpenWrt based Linux OS, C/C++, Python programmable
- ✓ Edge computing, up to local 32G local data storage

### Industrial IoT Gateway TG451 Series



- ✓ 4G LTE CAT 4, or CAT6
- ✓ Dual SIM, or Dual Module
- ✓ Rich I/O and customizable industrial protocols
- ✓ OpenWrt based Linux OS, C/C++, Python programmable
- ✓ Captive port and Radius

## Success Cases



**Note:**

1. Python, Node-RED, C/C++ programming may require customized firmware or SDK from Bivocom.
2. Touch screen is only available on TG462S.
3. There has a license fee for DMP.
4. \* Under progress
5. Price of the extended warranty will be different.
6. LTE CAT 6 is option, if you couldn't find the frequency band for your regions or have any questions, please contact Bivocom sales representatives for more information.
7. To save the earth, Bivocom doesn't print the user guide, if you need it, please go to Bivocom website to [download](#).