



TG501 Series

Mini Cellular RTU with I/O

Introduction

TG501 is a compact, cost-effective industrial remote telemetry unit (RTU) tailored for industrial applications including flow meters, water supply, wastewater treatment, water quality monitoring, weather stations, air quality monitoring, flood early-warning systems and water pump control.

Equipped with 4G LTE and LTE-M/NB-IoT connectivity options, the TG501 accommodates applications with varying data throughput requirements. It supports an optional sleep mode for low power consumption. Powered by Bivocom’s dedicated configuration tool, engineers can set up the RTU conveniently and pull data from diverse sensors and controllers with zero programming work.

The TG501 RTU features rich I/O interfaces including DI, ADC, RS232, RS485 and Relay, alongside mainstream industrial protocols such as MQTT, Modbus RTU, TCP and UDP. It seamlessly integrates legacy and new-generation sensing and control devices within a unified system, effectively cutting maintenance time and operational costs.

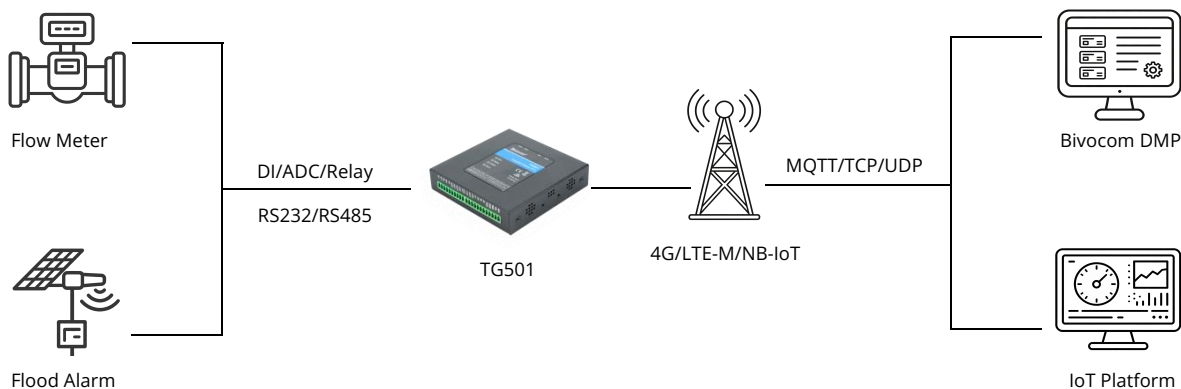
Key Features

- 4G LTE, or LTE CAT M1/NB-IoT (Optional)
- 2-RS232 (1-Debug), 1-RS485, 2-DI, 2-Relay Output, 3-Analog Input, 1-DC Power Output
- Sleep mode (Optional), timed data transferred to platform and automatic reporting
- Remote management via SMS, commands, Bivocom DMP*
- Supports data backup via up to 5 remote data servers and 16 MB local storage

Applications

- Flow Meters
- Weather Station
- Smart Agriculture
- Flood Alarm
- Water Pump
- Oil & Gas
- Wastewater Treatment
- Air Quality

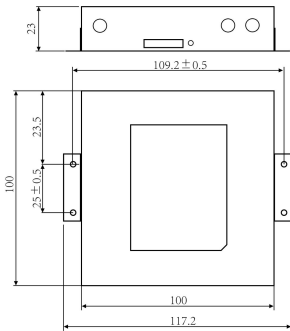
Diagram



Specifications

Systems		Power	
CPU	Industrial 32-bit MCU	Standard Power	12VDC/1.5A
Flash	512KB	Input Voltage	5-35 VDC
SRAM	256KB	Idle Mode	40~45mA@12VDC
Data Storage Flash	16MB	Working Mode	40~60mA@12VDC
Cellular		Physical Characteristics	
Antenna	1 x 50 Ω SMA-K	Ingress Protection	IP30
SIM Slot	1 Mini SIM (2FF)	Housing & Weight	Metal, 320g (0.71lbs), no accessories
Serial		Dimensions	100x100x23mm (3.94 x 3.94 x 0.91 in)
Ports	2 x RS232 (1 x Debug), 1 x RS485	Mounting	Wall mount, or DIN-Rail
Baud Rate	300bps to 115200bps	Environmental	
I/O		Operating Temp.	-35° C to +75° C (-31°F to +167°F)
Digital Input*	2-DI (Isolation, Dry Contact), Optional Wet Contact (Status "0": 0-3V, Status "1": 5-30V)	Storage Temp.	-40° C to +80° C (-40°F to +176°F)
Relay Output	2-Relay (Up to 5A, 30VDC/250VAC switch)	Relative Humidity	5% to 95% (non-condensing)
Analog Input*	3 x 12-bit (4-20mA, or 0-5V Optional)	Others	
Power Output	1 x 12VDC/1A, for powering field sensors & devices	LED Indicators	System, Online, Power, Error
GNSS (Optional)		Built-in	Watchdog, RTC, Timer
Module	GNSS from cellular module	Approvals	CE, RCM*, FCC*, NBTC
Antenna	1 x 50 Ω SMA-J	Warranty Period	Standard: 2-Year limited warranty Extended: 3-5 Years
		Software	
		Network Protocols	Modbus RTU, MQTT, Transparent TCP/UDP
		Management	Config tool, SMS, Bivocom DMP

Dimensions



Ordering Information

Model	Part Number	Cellular	Frequency Bands	Package Contents
TG501-LF	TG501-L<1>-<2>	4G LTE	4G LTE CAT 4* (Optional Global or Regional Version) • 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	1. TG501 x 1 2. Cellular Antenna x 1 3. RS232 Cable x 1 4. 12-Pin Terminal Block x 1 5. 10-Pin Terminal Block x 1 6. DIN-Rail Mount Kit x 1 7. Power Adapter x 1 (Optional EU/UK/AU/US/CN Type)
TG501-M	TG501-M<1>-<2>	LTE CAT M1/NB-IoT	LTE CAT M1/NB-IoT* FDD-LTE: B1/B2/B3/B4/B5/B8/B12/B13 B17/B18/B19/B20/B25/B26/B28/(CAT-M1 only); GPRS/EDGE 850/900/1800/1900Mhz	

Part Number:
<1>: Cellular module for different countries and regions
<2>: GN=GNSS from cellular module

Note:

1. Region-specific cellular modules are available; consult Bivocom sales for details.
2. Bivocom DMP (Device Management Platform) requires a license fee.
3. *Optional functions rely on matching hardware/firmware versions; not all features supported on one device.
4. Power consumption is measured under laboratory conditions and is for reference only.
5. *Listed certifications are pending.
6. Extended warranty pricing varies.
7. Digital user manuals are free to download from [Bivocom](#) official website for environmental protection.

About Bivocom

Founded in 2014, Bivocom specializes in industrial IoT communication technology. Our comprehensive product portfolio covers IoT sensors, cellular gateways, industrial routers, RTUs, modems, as well as self-developed IoT cloud management platforms. We deliver ruggedized industrial wireless hardware, full-lifecycle OEM/ODM customization services and end-to-end IoT connectivity one-stop solutions to industrial partners worldwide.

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