



TY511 Series

Industrial Cellular LCD RTU

Introduction

TY511 is an industrial remote telemetry unit (RTU) built for industrial scenarios including water supply, wastewater treatment, water quality monitoring, weather stations, air-quality monitoring, flood early-warning and water pump control.

Integrating PLC capabilities, I/O interfaces, 4G/3G cellular modem and 128 × 64 dot-matrix LCD with backlight in a single compact unit, the TY511 serves as an all-in-one RTU solution. The backlit 128*64 LCD enables on-site local status viewing, real-time data check and parameter display without connecting to a remote platform, facilitating quick on-site commissioning and field troubleshooting. With Bivocom’s powerful configuration tool, engineers can readily set up the device and acquire data from diverse sensors and controllers — no programming required.

The TY511 features rich I/O options: DI, ADC, RS232/RS485, Relay and Pulse inputs. It supports mainstream industrial protocols such as MQTT, Modbus RTU, TCP/UDP. It seamlessly combines legacy and modern field sensors and controllers within one unified system, cutting hardware investment and maintenance time-to-cost.

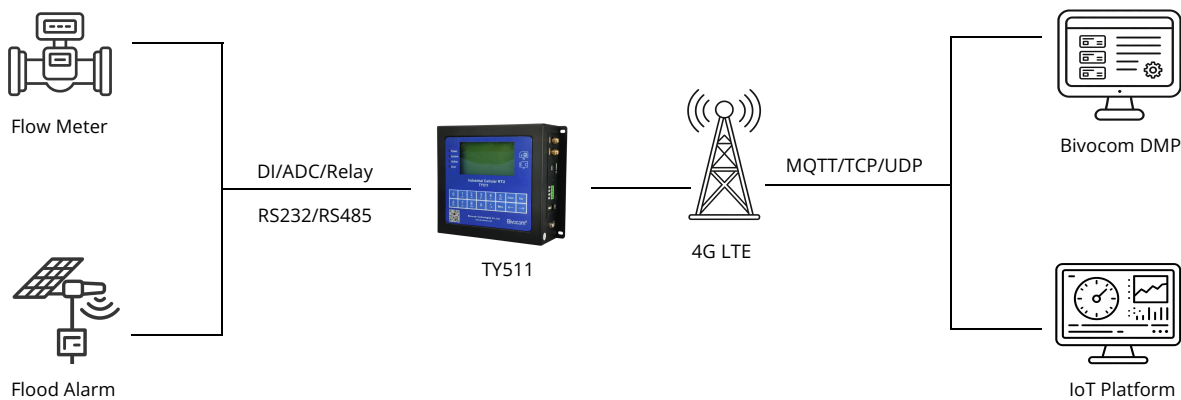
Key Features

- 4G LTE cellular connectivity
- 2-RS232, 2-RS485, 8-DI, 8-Analog Input, 8-Relay Output, 2-DO, 4-Pulse Input, 3-DC Power Output
- 2-power inputs for automatic main-backup power switchover
- Timed data transmission to cloud platform with automatic alarm & event reporting
- Remote management via SMS, commands, Bivocom DMP*
- Up to 5 remote data backup servers and 16 MB local data storage

Applications

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

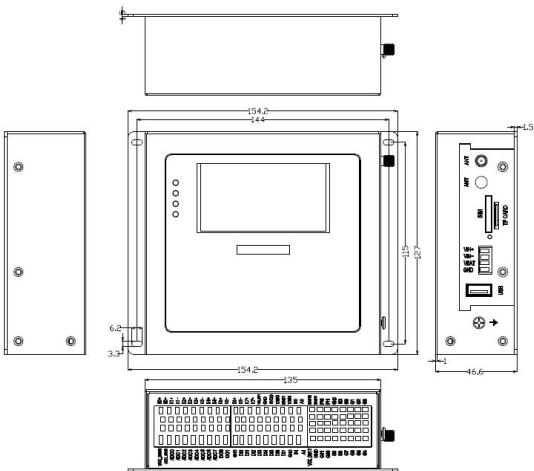
Diagram



Specifications

Systems		GNSS (Optional)	
CPU	Industrial 32-bit MCU	Module	GNSS from cellular module
Flash	512KB	Antenna	1 x 50 Ω SMA-J
SRAM	256KB	Power	
Data Storage Flash	16MB	Standard Power	12VDC/1.5A
Cellular		Input Voltage	5-35 VDC
Antenna	2 x 50 Ω SMA-K	Idle Mode*	40—45mA@12VDC
SIM Slot	1 Mini SIM (2FF)	Working Mode*	40—85mA@12VDC
Screen & Keyboard		Physical Characteristics	
LCD Screen	128*64 dot matrix, backlight	Ingress Protection	IP30
Keyboard	16 Keys (2*8 keys)	Housing & Weight	Metal, 770g (1.70lbs), without accessories
Serial		Dimensions	154.2 × 127 × 46.6mm (6.07x5x1.83in)
Ports	2 x RS232, 2 x RS485	Mounting	Desktop, Wall mount
Baud Rate	300bps to 115200bps	Environmental	
I/O		Operating Temp.	-35° C to +75° C (-31°F to +167°F)
Digital Input	8 x 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	8 x Relay (Up to 5A, 30VDC/250VAC switch)	Relative Humidity	5% to 95% (non-condensing)
Analog Input	8 x 16-bit (4-20mA, or 0-5V Optional)	Others	
Digital Output	2 x DO (Optical isolation, open collector) Rated driving current/voltage: 50mA/35V	LED Indicators	System, Online, Power, Error
Pulse Input	2 x Tipping bucket rain gauge input (Low level 0-1V)	Built-in	Watchdog, RTC, Timer
Power Output	2 x Pulse input (High level 2-30V)	Approvals2	CE*, RCM*, FCC*, NBTC*
	3 x 12VDC, 1 or 2A, for powering field sensors & devices	Software	
Note: I/O not listed on spec are reserved only and disabled! (TF, USB, etc.)		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
TY511-LF	TY511-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. TY511 x 1 2. Cellular Antenna x 2 3. RS232 Cable x 1 4. 12-Pin Terminal Block x 4 5. 10-Pin Terminal Block x 2 6. 4-Pin Terminal Block x 1 7. Power Adapter x 1 (Optional EU/UK/AU/US/CN Type)
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. Other I/O not listed on spec are reserved only and disable, please contact Bivocom sales if you have more request.
6. *Listed certifications are pending.
7. Extended warranty pricing varies.
8. 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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