

TY511 Series Industrial Cellular RTU

Introduction

TY511 Series RTU is a type of industrial cellular remote telemetry unit, which adopts high-powered industrial 32-bits CPU, with multi-layer software detection and hardware protection mechanism to ensure reliability and stability of the device. It supports worldwide carrier 4G/3G/2G cellular network FDD-LTE, TDD-LTE, and HSPA/UMTS/WCDMA, EVDO, TD-SCDMA, EDGE, CDMA 1X and GPRS, to realize real time data acquisition, storage, control, alarm and transmission, as well as security of data transmission.

TY511 has rich interfaces, including tipping bucket rain gauge input, gray code, RS232, RS485, SDI-12, I/O, etc., and it has been widely used for remote monitoring and control applications, such as, hydrology, water resources, water pollution, water treatment, reservoir dam, mountain flood disaster, geological disaster, meteorology,

environmental protection, new energy resources, etc.

Key Features

- **Rich and flexible industrial interfaces**
2x rain gauges, 1x 12-bit gray code(option), 2x RS232, 2x RS485, 1x SDI-12(Option), 8x analog input, 8x digital input, 2x digital output, 8x relay output, etc.
- **Large capacity of local data storage**
Supports up to 16MB data storage and additional SD card data storage (Up to 16G), ideal for long term data storage and parameters setting.
- **Secure and transparent data transmission**
Built in standard TCP/IP stack, supports up to 5 data centers for synchronous and transparent data transmission.
Local historical data exporting (via serial port or SD card), remote real time and historical data query.
Integrated with data acquisition and 4G/3G/2G data transmission, reliable and cost-saving, to realize

hydrology and water resources data acquisition, storage, display, control, alarm and transmission, etc.

- **Easy to configure and use**
Support multi types of configuration, including configured through local LCD and keyboard, serial port, remote configuration, etc.
- **Low power consumption design**
Supports types of work modes, sleep mode, timing collecting and sending data to center, auto report, etc.
- **Remote management**
Support remote management, including remote configuration through data center and SMS(under development), remote firmware upgrade, and center management software(option) to manage the devices remotely.
- **Extendable functionalities**
Support monitoring status of current of external battery.



Support image capture(via serial port camera).
Support external LCD/LED display(via USB Port)

- **Robust and reliable**
High standard Industrial grade design, suitable for unattended and harsh industrial applications.

Complete system protection and keep online mechanism, to ensure always online
Support anti-electromagnetic interference, suitable for harsh environment.

Specifications

System

CPU: Industrial 32-bit
FLASH: 16MB (Extendable to 32MB)
SRAM: 256K

Cellular Interface

4G/3G/2G for option (FDD-LTE, TDD-LTE, HSPA/WCDMA, EVDO, TD-SCDMA, EDGE, CDMA 1X and GPRS)

Cellular Antenna Interface

Number of ports: 1
Note: Standard SMA female antenna interface, characteristic impedance 50Ω

SIM Interface

Number of Ports: 1
Note: Standard drawer type card holder, support 1.8V/3V SIM/UIM card, built-in 15KV ESD protection

Grounding screw

Number of ports: 1x M3 screw

LCD Screen

128*64 dot matrix, backlight

Keyboard

Number of keys: 16 Keys (2*8 keys)

Pulse quantity

2x tipping bucket rain gauge input(low level)
2x pulse input(high level)

Gray code(Optional)

Number of ports: 1
Note: 12-bit gray code interface

SDI12(Optional)

Number of ports: 1
Start Bit: 1 bit
Data Bit: 7 bit
Parity Bit: 1 bit
Stop Bit: 1 bit

Baud Rate: 1200bps

Analog quantity

Number of ports: 8
Note: 16-bit AD, support 4-20mA current signal input, and 0-5V voltage signal input is optional

DI(Digital Input)

Number of ports: 8(optical isolation)
Logic 0: Wet contact 0-3VDC, or dry contact close
Logic 1: Wet contact DC 5-30V, or dry contact open

DO(Digital output)

Number of ports: 2(optical isolation, Open Collector)
Rated drive current: 50mA
Rated drive voltage: 35V

Relay

Number of ports: 8
Max switching voltage: 30VDC/220VAC
Max switching current: 4A
Max switching power: 120W

Power output

Number of ports: 3
Note: power output is the same as power input of RTU, default is 12V. Rated output current of 1 power output is 1A, and total rated output current of 3 power outputs is 2A, built in overcurrent protection

USB Port(Reserved)

Number of ports: 1
Note: support external serial port LCD/LED display.

SD card port

Number of ports: 1
Note: support up to 16G SD card.

Serial Interface (Industrial terminal block)

Number of ports: 4, (2x RS232, 2x RS485)
Note: Built-in 8KV ESD protection for RS232, and 15KV ESD protection for RS485

Serial Communication Parameters

Baudrate: 300~230400bits/s

Data Bit: 5, 6, 7, 8 bits

Stop Bit: 1, 1.5, 2 bits

Check: No, Even-parity, Odd Parity, SPACE and MARK

Power Requirements

Standard Power: DC 12V/1.5A

Power Range: DC 5~35V

Note: Built-in power inverting protection and over voltage protection

Power Consumption

Communication: 45~55mA@12VDC

Standby: 37mA@12VDC

Sleep: 2mA@12VDC

LED Indicators

Power, System, Online, Error

Reliability

Low power consumption design, including sleep mode,

Timing online/offline modes.

EMC up to level 3

Use NTP technology, build-in RTC

SIM/UIM card port built-in 15KV ESD protection

Warranty

Warranty Period: 12 months

Environmental Limits

Operating Temperature: -35~+75°C (-31~+167 °F)

Storage Temperature: -40~+80°C (-40~+176 °F)

Ambient Relative Humidity: 93%±3%, non-condensing

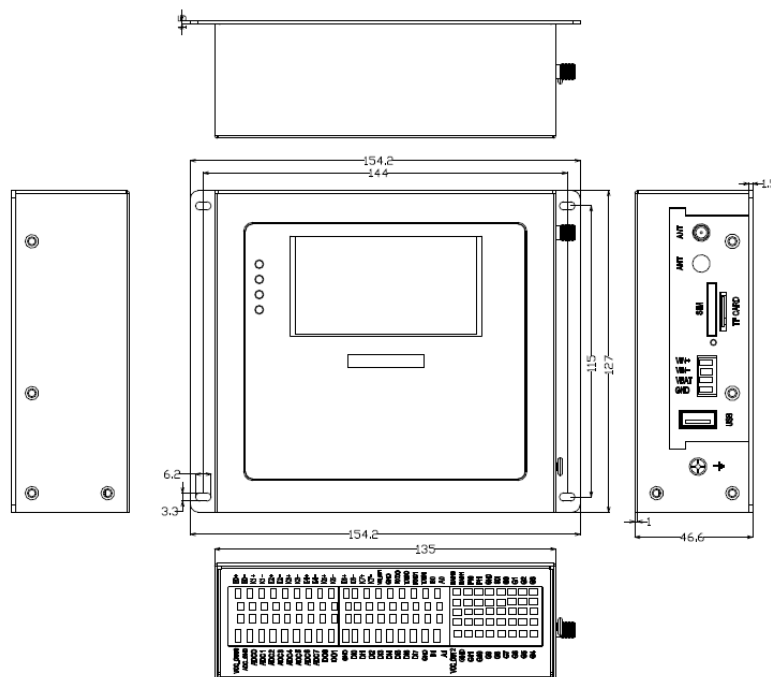
Physical Characteristics

Protection Class: IP30, Housing and system are isolated safely, ideal for industrial automation application

Housing: Iron

Weight: 790g(1.74lbs), accessories are not included.

Dimension: 154.2×127×46.6mm (6.07×5×1.83 inches), Antenna and other accessories are not included.



Order Information

Models to choose

TY511-LF, Industrial LTE/WCDMA RTU

TY511-W, Industrial WCDMA RTU

TY511-G, Industrial GPRS RTU

Standard Package Content

- TY511 Gateway Host
- Power Adapter(DC 12V/1.5A)
- 1x Cellular Antenna (Male SMA)
- 1x RS232 Cable

- 4x 12-Pin Terminal Blocks
- 2x 10-Pin Terminal Blocks
- 1x 4-Pin Terminal Blocks

Package

QTY/BOX: 1 PCS

Gift box size: 29*25*7cm(11.42*9.84*2.76in)

Gift box G.W.: 1.5KGS(3.31lbs), accessories included.

QTY/CN: 5 PCS or 8 PCS(Without giftbox)

Carton dimension: 38*31*28cm(14.96*12.20*11.02in)

Carton G.W.: 8.10KGS(17.86lbs, with gift box) or 7.10KGS(15.65, without gift box)

Note: Please visit our website for available frequency band of Bivocom industrial cellular gateways, or contact sales@bivocom.com for more information.