

TR323 Series

Industrial Mini 5G IoT Routers



Key Features

- Compact design with DIN-Rail Mounting
- Global 5G NR, 4G LTE to choose¹
- 2-RJ45(GbE), 1-RS232(Debug), 2-RS485, 2.4G WIFI(Optional), GNSS(Optional)
- Dual SIM for failover
- OpenWRT based Linux OS, Python, C/C++ programmable²
- Wide operating temperature: -35~+75 °C
- Modbus RTU/TCP, MQTT, JSON, TCP/UDP, OPC UA and customized industrial protocols
- VPN, SNMP, BGP, HTTP, Telnet, SSH, CLI, SPI firewall

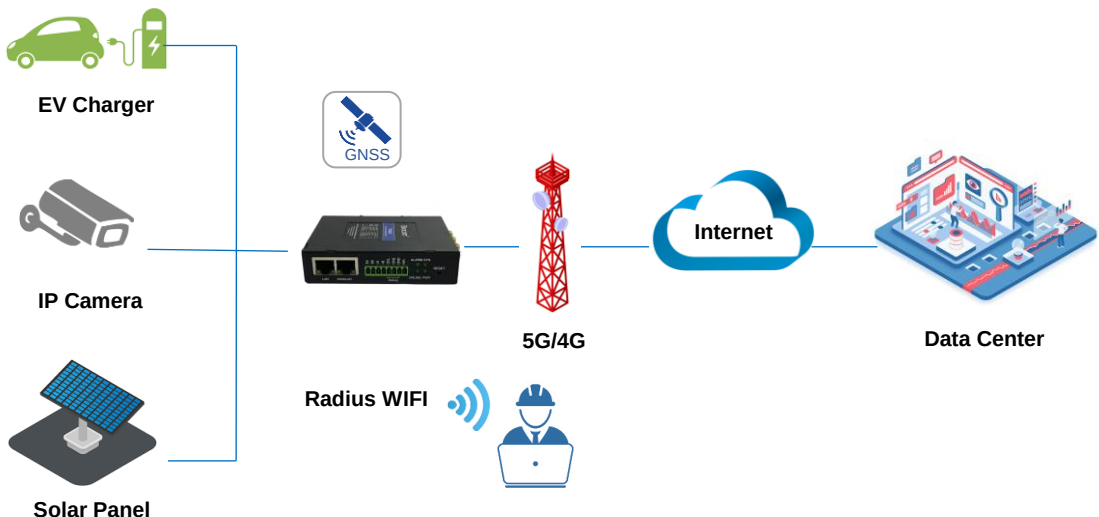
Introduction

The TR323 is a mini industrial 5G NR IoT router designed for IoT, M2M, and eMBB applications requiring higher speed, lower latency data transmission. It provides OpenWRT based Linux OS embedded environment that allows IoT developers and engineers to program and install their own applications based on Python, C/C++ to the hardware.

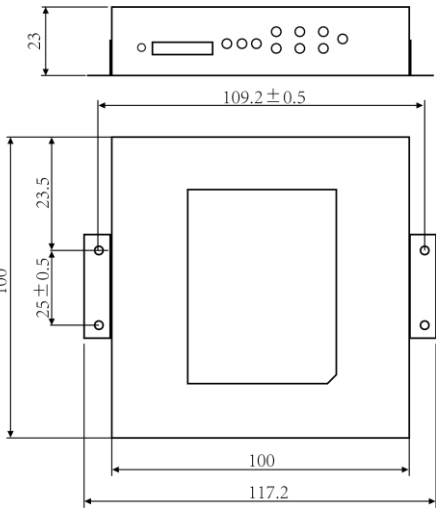
The TR323 router has 2-Gigabit ethernet ports, 1-RS232(debug), 2-RS485, to connect to ethernet and serial controllers, sensors, transferring the data to the cloud server via 5G/4G LTE cellular network. It comes with industrial protocols, such as MQTT, Modbus RTU/TCP, JSON, TCP/UDP, OPC UA and VPN to provide you an efficient and secure IoT data connectivity between field devices and cloud server.

The TR323 router supports dual sim for failover, providing robust and reliable wireless and wired connectivity for your mission-critical industrial applications, and GNSS to track your remote assets, such as EV charging station, solar power, smart pole, smart cities, smart buildings, smart traffic light, digital signage advertising, vending machines, ATM, etc.

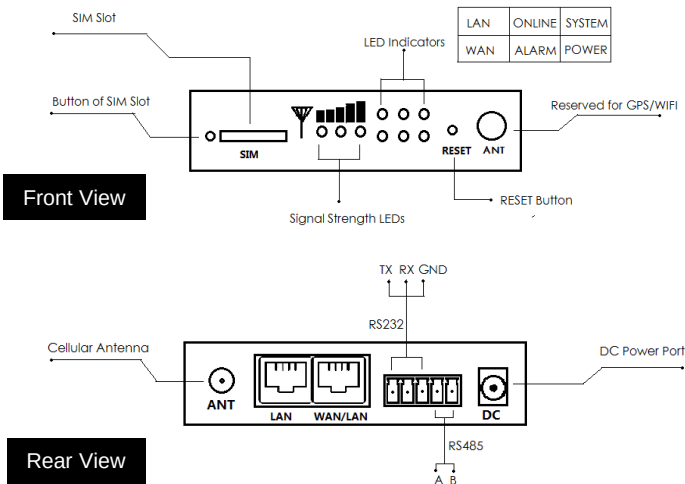
Applications



Dimensions(mm)



Side Views



Related Products

Industrial IoT Router
[TR341 Series](#)



- ✓ 4G LTE CAT 4 or CAT6
- ✓ 1-R232, 1-RS485, 5-RJ45, WIFI, GPS(Optional)
- ✓ OpenWrt based Linux OS, C/C++, Python programmable
- ✓ Modbus RTU/TCP, MQTT, VPN
- ✓ Captive port and Radius WIFI

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 WIFI

Specifications

System

- CPU32-bit, dual core
- Flash32MB
- RAM256MB

Cellular Interfaces

- Antenna4 × 50 Ω SMA Female(5G Version TR323-NR)
- Connector2 × 50 Ω SMA Female(4G Version TR323-LF)
- SIM Slot2 × Micro SIM³
- ESD Protection15KV

Ethernet Interface

- Ports2-RJ45 (1-WAN, 1-LAN or 2-LAN configurable)
- Data Rates10/100/1000 Mbps (Auto-Sensing), Auto MDI/MDIX
- ESD Protection1.5KV

Serial Interfaces

- ConnectorTerminal block, 3.5 mm female socket
- Ports1-RS232(Debug), 2-RS485
- Baud Rate300bps to 230400bps
- ESD protection8KV for RS232, 15KV for RS485

Wi-Fi(Optional)

- Antenna Connector1 × 50 Ω RP-SMA Female
- StandardIEEE 802.11b/g/n, AP and Client modes
- Transmission RateIEEE802.11b/g: Up to 54Mbps
IEEE802.11n: Up to 300Mbps
- SecurityOpen, WPA, WPA2, WPA/WPA2 Enterprise, Radius

GNSS (Option)

- ModuleGNSS from cellular module
- Antenna Connector1 × 50 Ω SMA Female

Power Supply and Consumption

- ConnectorTerminal block, 3.5 mm female socket
- Standard PowerDC 12V/1.5A
- Input Voltage5-35 VDC
- Idle Mode200 ~ 230mA@12VDC
- Working Mode360 ~ 430mA@12VDC

Software

- Network ProtocolsPPP, PPPoE, SNMP v1/v2c/v3, TCP, UDP, DHCP, RIPv1/v2, OSPF, BGP, DNS, DDNS, HTTP, ARP, QoS, SNTP, Telnet, SSH
- Serial PortMQTT, Transparent (TCP/UDP Client/Server), Modbus RTU/Modbus TCP
- VPN TunnelIPsec/PPTP/L2TP/GRE/OpenVPN
- FirewallACL/DMZ/Port Mapping/MAC Binding
- ManagementWeb, CLI, SMS, Cloud DMP (Device Management Platform)⁴
- ReliabilityDual SIM, WWAN and WAN Failover, Hardware & Software Watchdog
- Secondary DevelopmentOpenWrt based Linux OS, C/C++, Python, LUA and SDK

Physical Characteristics

- Ingress ProtectionIP30
- Housing & WeightMetal, 268g(0.59lbs), without accessories
- Dimensions103.50x78.20x24.10mm (4.09 x 3.07 x 0.94in)
- MountingDesktop, DIN-Rail

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 Humidity5% to 95% (non-condensing)
- Ethernet Isolation1.5 kV RMS

Others

- Reset Button1
- LED IndicatorsSystem, Online, Power, Alarm
- Built-inWatchdog, RTC, Timer
- Approvals⁵CE*, RCM*, FCC*
- Warranty Period⁶Standard: 12 Months
Extended: 2-5 Years

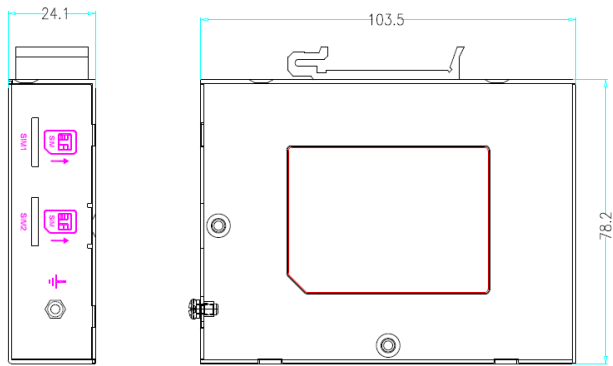
Standard Package Content

- | | | |
|----|---|--|
| 1. | TR323 Router | 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) | 5G Version: 4 PCS
4G Version: 2 PCS |
| 4. | RS232 Cable (DB9 Female, 1 meter) | 1 PCS |
| 5. | Ethernet Cable(1 meter) | 1 PCS |
| 6. | 8-Pin Terminal Block | 1 PCS |
| 7. | DIN-Rail Mount Kits | 1 PCS |

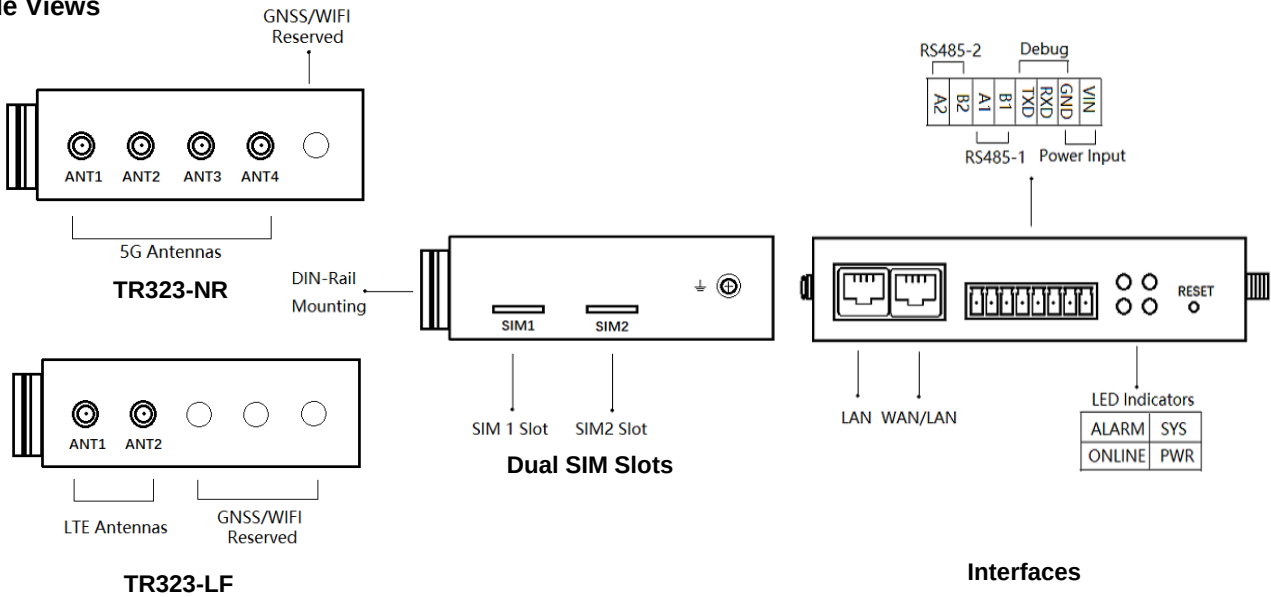
Order Information

Model	Part Number	Description	Frequency Band ⁷
TR323-NR	TR323 - N<1><2> - <3>	5G Router, 5-GE, 1-RS232, 2-RS485, 2.4G WIFI(option), or GNSS(Optional)	5G NR Sub-6 • n1/n2/n3/n5/n7/n8/n12/n20/n28/n41/n66/n71/n77/n78/n79 • 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 • LTE TDD: B34/B38/39/B40/B41/B42/B43/B48
TR323-LF	TR323 - L<1><2> - <3>	4G Router, 5-GE, 1-RS232, 2-RS485, 2.4G WIFI(option), or GNSS(Optional)	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
<1>: 5G or 4G module for different countries and regions <2>: DS=dual SIM on single module, failover only <3>: W=2.4G Single band WIFI GN=GNSS from cellular module			

Dimensions(103.5x78.2x24.1mm)



Side Views



Related Products

4G IoT Router
[TR321 Series](#)



- ✓ 4G LTE, LTE-M/NB-IoT
- ✓ OpenWrt based Linux OS, C/C++, Python programmable
- ✓ 1-RS232, 1-RS485, 2-RJ45

5G NR IoT Gateway
[TG453 Series](#)



- ✓ 5G NR NA/NSA dual mode
- ✓ Serial and Gigabit ethernet ports, with mainstream industrial protocols
- ✓ OpenWrt based Linux OS, C/C++, Python programmable

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. DSSM=dual sim on single module, supports failover.
4. There has a license fee for DMP.
5. * Under progress
6. Price of the extended warranty will be different.
7. If you couldn't find the frequency band for your regions or have any questions, please contact Bivocom sales representatives for more information.
8. To save the earth, Bivocom doesn't print the user guide, if you need it, please go to Bivocom website to [download](#).