

### IoT Router with Ethernet/Serial Port/WIFI/GNSSSS



TR341 is a feature-rich and cost-effective IoT router designed for industrial applications, such as vending machines, ATM, Kiosk, WIFI advertisement, digital signage, smart traffic light, EV charging point.

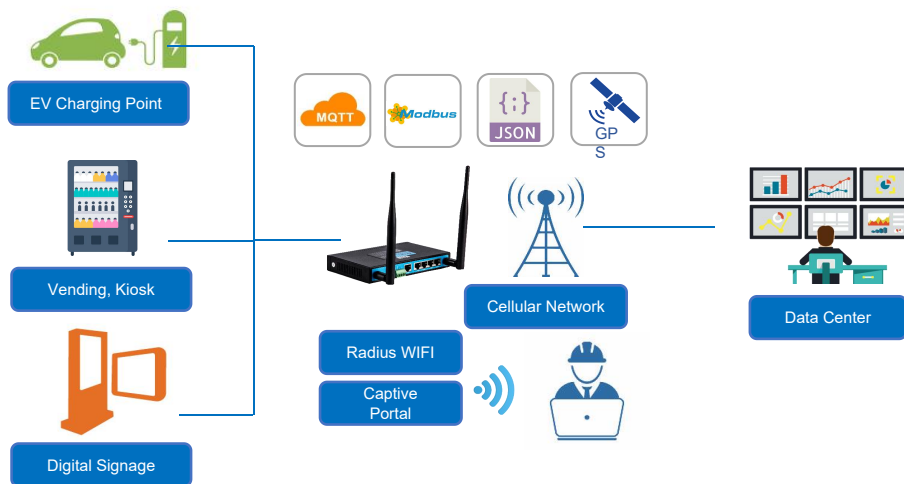
TR341 has 5-RJ45, 1-RS232, 1-RS485, which is perfect for connecting the ethernet or serial port devices to cloud. And the captive portal feature is ideal for WIFI advertisement, optional of GNSS is great for tracking remote assets. In addition, the dual SIM and auto switchover between WAN and WWAN, multiple VPN features provide robust and secure connectivity for data transmission.

TR341 is an OpenWrt based Linux OS industrial IoT router, which provides C/C++, Python programmable embedded environment for IoT developers and programmers to implement their industrial applications in a flexible and fast way.

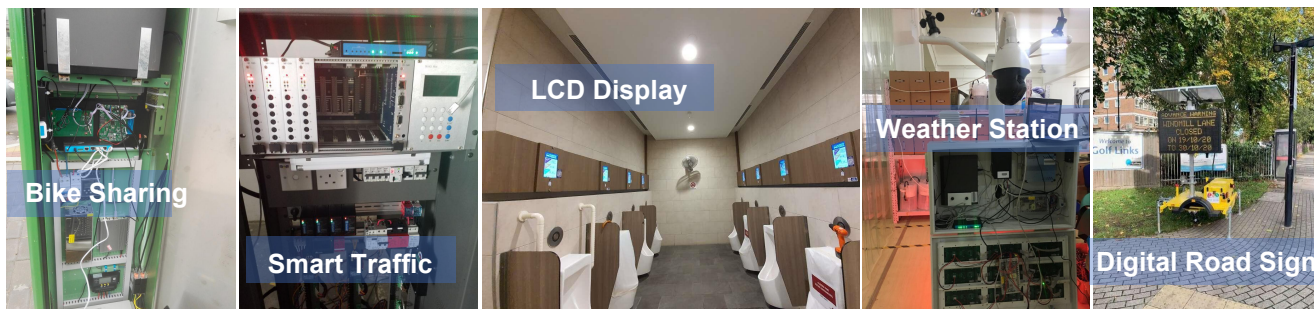
### Key Features

1. Global 4G LTE/3G/2G or LTE CAT M1/NB-IoT version to choose
2. Dual SIM(Optional) for failover<sup>1</sup>, auto switchover between wireless and wired WAN
3. 4-LAN, 1-WAN, 1-RS232, 1-RS485, WIFI(802.11b/g/n), GNSS/GPS(Optional)
4. OpenWrt based Linux OS, provides programmable environment for C/C++, Python, LUA developers<sup>2</sup>
5. Captive portal for WIFI advertisement, and Radius WIFI for secure authentication<sup>3</sup>
6. Multiple VPN protocols, IPsec, L2TP, PPTP, GRE and OpenVPN, to ensure secure data transmission
7. LTE/3G/PPPoE DHCP and static address connection
8. DHCP server, DHCP binding MAC address, DDNS, firewall, NAT, DMZ host, QoS, traffic analysis
9. MQTT, Modbus RTU/TCP, TCP/UDP, HTTP, BGP, SNMP, ICMP, FTP, TFTP, POP3, SMTP protocols
10. SPI Firewall, Port Mapping, DMZ Mapping, ACL, IP-MAC binding and Clone function
11. Web UI, telnet & SSH CLI, AT Command configuration
12. Web upgrade, local and remote syslog, serial port output log
13. SMS commands and DMP(Device Management Platform)<sup>4</sup> for remote configuration and management
14. Flash: 32M, RAM:128M

### Applications



### Success Cases



# Specifications

## Cellular Interfaces

- **Antenna Connector** 1 × 50 Ω SMA Female
- **SIM Slot** 1, or 2(DSSM, Option)
- **ESD Protection** 15KV

## Ethernet Interface

- **Ports** 5-RJ45 (1-WAN, 4-LAN or 5-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** 1-RS232, 1-RS485
- **Baud Rate** 300bps to 4608000 bps
- **ESD protection** 8KV for RS232, 15KV for RS485

## Wi-Fi

- **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 (Optional)

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

## Software

- **Network Protocols** PPP, PPPoE, SNMP v1/v2c/v3, TCP, UDP, DHCP, RIPv1/v2, OSPF, BGP, DNS, DDNS, HTTP, ARP, QoS, SNMP, Telnet, SSH server/client, IEC 60870-5-4, DNP
- **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)
- **Reliability** WWAN and WAN Failover, Dual SIM Backup and Load Balance, Hardware & Software Watchdog
- **Secondary Development** OpenWrt based Linux OS, support C/C++ Python, LUA and SDK

## Power Supply and Consumption

- **Connector** Plug-In
- **Standard Power** DC 12V/1.5A
- **Input Voltage** 5-35 VDC
- **Power Consumption** 280 ~ 330mA@12VDC
- **Idle Consumption** 190 ~ 240mA@12VDC

## Physical Characteristics

- **Ingress Protection** IP30
- **Housing & Weight** Metal
- **Dimensions** 530 g(1.17lbs), without accessories  
168 x 104 x 27mm (6.61 x 4.09 x 1.06 in)
- **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** Power, WAN, LAN, WIFI, System, Alarm, Online, Signal Strength Watchdog, RTC, Timer
- **Built-in** CE, RCM\*, FCC\*, NBTC
- **Approvals<sup>5</sup>** Standard: 12 Months
- **Warranty Period<sup>6</sup>** Extended: 2-5 Years

## Standard Package Content

1. TR341 Router 1 PCS
2. Power Adapter(DC 12V/1.5A, EU/US/UK/AU plug optional) 1 PCS
3. RP-SMA WIFI Antenna (19.5cm, 5dBi) 1 PCS
4. Mag-mount Cellular Antenna (SMA Male, 1 meter, 5dBi) 1 PCS
5. RS232 Cable (DB9 Female, 1 meter) 1 PCS
6. Ethernet Cable(1 meter) 1 PCS
7. 5-Pin Terminal Block 1 PCS
8. Wall mount kits 1 PCS

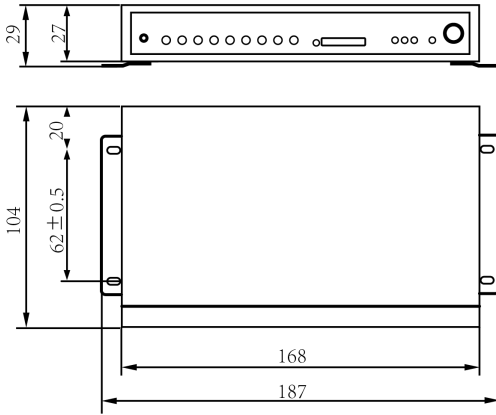
## Order Information

Model	Part Number	Description	Cellular Network	Frequency Band <sup>7</sup>
TR341-LF	TR341-L<1><2>-<3>	4G IoT Router, WIFI, 1-RS232, 1-RS485, 5-RJ45	4G LTE 3G/WCDMA/UMTS/HSPA+ EDGE/GPRS	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
TR341-W	TR341-W<1><2>-<3>	3G IoT Router, WIFI, 1-RS232, 1-RS485, 5-RJ45		3G/WCDMA/UMTS/HSPA+ EDGE/GPRS
TR341-M	TR341-M<1><2>-<3>	LTE-M/NB-IoT Router, WIFI, 1-RS232, 1-RS485, 5-RJ45	LTE CAT M1/NB-IoT, EDGE/GPRS	Global: FDD-LTEB1/B2/B3/B4/B5/B8/B12/B13 B17/B18/B19/B20/B25/B26/B28(CAT-M1 only); GPRS/EDGE 850/900/1800/1900Mhz

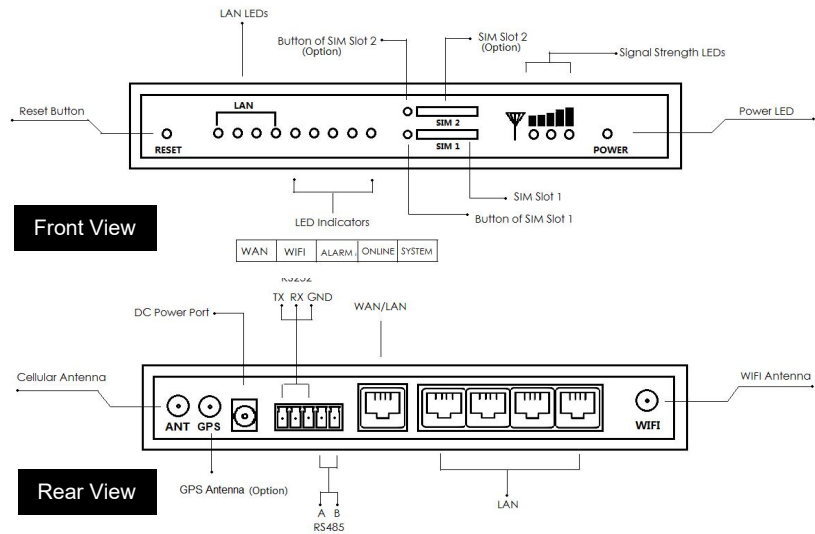
Note:

1. Dual SIM is an optional feature, it's Dual SIM on Single Module(DSSM), supports failover between 2 SIM cards.
2. Python, LUA requires customized hardware and firmware, please contact Bivocom to discuss your application.
3. Available on customized firmware
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](#).

## Dimensions(mm)



## Side Views



## Related Products

### Entry-level IoT Router [TR321 Series](#)



- ✓ 4G LTE or LTE-M/NB-IoT
- ✓ OpenWrt based Linux OS, C/C++, Python programmable
- ✓ 1-R232, 1-RS485, 2-RJ45
- ✓ Modbus RTU/TCP, MQTT, VPN

### 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