



TR341 Series

Industrial Cellular IoT Routers

Introduction

TR341 is a cost-effective, full-featured industrial IoT router ideal for vending machines, ATMs, Wi-Fi advertising, digital signage, solar panel, smart traffic lights and EV charging stations.

Equipped with 5-RJ45 Ethernet ports, 1-RS232 and 1-RS485 interface, the TR341 seamlessly connects Ethernet and serial devices to the cloud. It supports optional GNSS for remote asset tracking, while optional dual-SIM and WAN/WWAN failover ensure stable network connectivity. Multiple VPN protocols guarantee secure and reliable industrial data transmission.

Powered by Bivocom OS, TR341 supports mainstream protocols including Modbus RTU/TCP, JSON and TCP/UDP, as well as customizable industrial protocols such as OPC UA*, IEC101/104/61850* and BACnet IP/MSTP*. It integrates WireGuard, OpenVPN and IPsec for encrypted network communication. The router also supports secondary development with C/C++, optional Python and Lua, providing official Bivocom SDK and APIs to accelerate customized IoT project deployment.

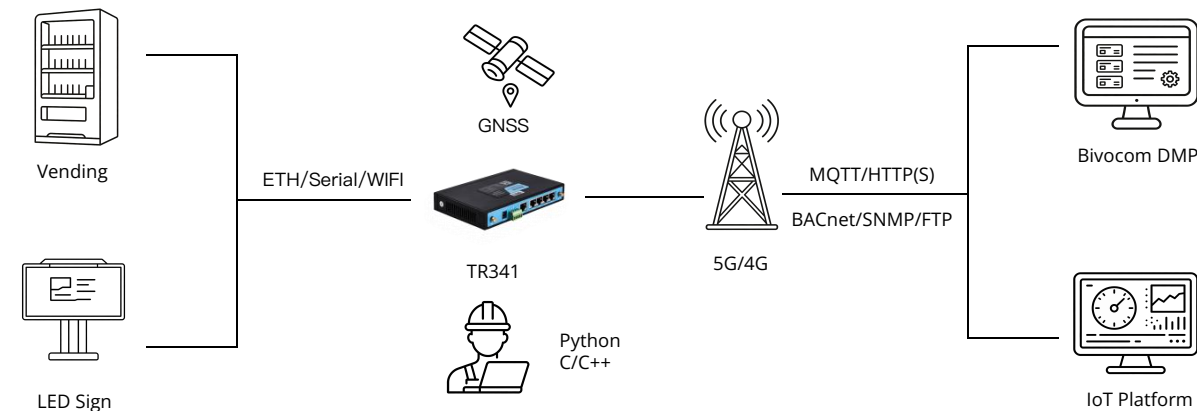
Key Features

- 4G LTE, or 5G RedCap (Optional)
- 5-ETH, 1-RS232, 2-RS485, 2.4G WIFI, GNSS (Optional)
- Programming Bivocom OS: C/C++, Python (Optional)
- Modbus RTU/TCP, JSON, BACnet IP/MSTP*, OPC UA*, IEC 101/104/61850*, and customized industrial protocols
- MQTT, FTP*, HTTP(S), Wireguard VPN, SNMP*, Telnet, SSH
- Remote configuration and management by Bivocom DMP*
- Dual SIM (Optional) for cellular network failover

Applications

- Digital Signage
- Vendings & ATM
- Traffic Lights
- IP Camera
- Water & Waste Water
- EV Charger
- Weather Station
- Smart Parking

Diagram



Specifications

Systems

CPU	32-bit MIPS
Flash	16MB (32MB Optional)
RAM	128MB

Cellular

Antenna	1 x 50 Ω SMA-K
SIM Slot*	1 Mini SIM (2FF), or 2 (DSSM Optional)

Ethernet

Ports	5 x 10/100 Mbps 1 x WAN, 4 x LAN, or 5 x LAN Configurable
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Serial

Ports	1 x RS232, 1 x RS485
Baud Rate	1200bps to 230400bps

Wi-Fi

Antenna	1 x 50 Ω RP-SMA-J
Standard	IEEE 802.11b/g/n, AP/Client modes
Bands	2.4GHz
Security	Open, WPA, WPA2, Radius

GNSS / GPS (Optional)

Module	GNSS from cellular module, or independent GPS Module
Antenna	1 x 50 Ω SMA-J

Power

Input	5-35VDC
Standard Power	12VDC/1.5A
Idle Mode	190 ~ 240mA@12VDC
Working Mode	280 ~ 330mA@12VDC

Physical Characteristics

IP Rating	IP30
Housing & Weight	530 g (1.17lbs), without accessories
Dimensions	168 x 104 x 27mm (6.61 x 4.09 x 1.06 in)
Mounting	Desktop, Wall mount

Environmental

Operating Temp.	-35° C to +75° C (-31°F to +167°F)
Storage Temp.	-40° C to +80° C (-40°F to +176°F)
Relative Humidity	5% to 95% (non-condensing)

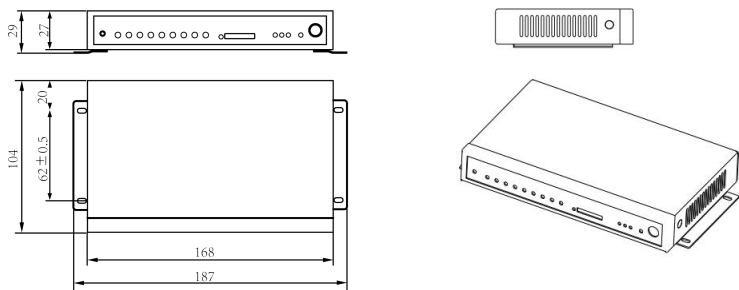
Others

Reset Button	1
LED Indicators	Power, WIFI, System, Alarm, Online, Signal
Built-in	Watchdog, RTC, Timer
Approvals	CE, RCM*, NBTC, FCC*
Warranty Period	Standard: 2-Year limited warranty Extended: 3-5 Years

Software

Programming	Bivocom OS (OpenWrt based Linux OS) C/C++, Python*, LUA* and SDK
Data Protocols	Modbus RTU/TCP, SMS, SNMP*, IEC101/104*, IEC61850*, BACnet IP/MSTP*, OPC UA*, etc.
Network Protocols	VXLAN, IPV6*, DDNS, DNS, ARP, Static Routing, NAT, Firewall, Telnet/SSH, PPP, PPPoE, DHCP, ICMP, NTP, etc.
Server Supported	MQTT, HTTP(S), Transparent TCP/UDP, FTP*
VPN	Wireguard/OpenVPN/IPsec/PPTP/L2TP
Firewall	ACL/DMZ/Port Mapping/MAC Binding
Management	Web, CLI, SMS, Bivocom DMP (Device Management Platform)*
Reliability	Dual SIM*, WWAN and WAN Failover, Hardware & Software Watchdog

Dimensions



Ordering Information

Model	Part Number	Cellular	Frequency Bands	Package Contents
TR341-LF	TR341 - L <1><>2 - <3>	4G LTE	4G LTE CAT 4* (Optional Global or Regional Version) <ul style="list-style-type: none">• 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	<div><div>1.</div><div>TR341 x 1</div></div> <div><div>2.</div><div>Cellular Antenna x 1 (TR341-RC: 2)</div></div> <div><div>3.</div><div>WIFI Antenna x 1</div></div> <div><div>4.</div><div>Ethernet Cable x 1</div></div> <div><div>5.</div><div>5-Pin Terminal Block x 1</div></div> <div><div>6.</div><div>Wall Mount Kit x 1</div></div> <div><div>7.</div><div>Power Adapter x 1 (Optional EU/UK/AU/US/CN Type)</div></div>
TR341-RC	TR341 - RC <1><2> - <3>	5G RedCap	5G NR Sub-6 SA* (Optional Global or Regional Version) <ul style="list-style-type: none">• n1/2/3/5/7/8/12/13/14/18/20/25/26/28/30/38/40/41/48/66/70/71/77/78/79• LTE FDD B1/2/3/4/5/7/8/12/13/14/17/18/19/20/25/26/28/30/66/70/71• LTE TDD B34/38/39/40/41/42/43/48	
<div>Part Number:</div> <div><1>: 5G or 4G module for different countries and regions</div> <div><2>: DS=Dual SIM Single Module</div> <div><3>: W=2.4G WIFI; G=GPS (Standalone GPS); GN=GNSS from cellular module</div>				

- Note:**
- 1. Region-specific cellular modules are available; consult Bivocom sales for details.
 - 2. Compiler & SDK are provided for secondary development. Python require dedicated hardware&firmware (32MB Flash version)
 - 3. DSSM: Dual-SIM single-module design with automatic network failover; DSDM.
 - 4. Bivocom DMP (Device Management Platform) requires a license fee.
 - 5. *Optional functions rely on matching hardware/firmware versions; not all features supported on one device.
 - 6. Power consumption is measured under laboratory conditions and is for reference only.
 - 7. *Listed certifications are pending.
 - 8. Extended warranty pricing varies.
 - 9. 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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