

## Proscend M301 Series Industrial 4G LTE Cellular Router



### Introduction

Proscend M301 Series Industrial 4G LTE Cellular Router is highly reliable and secure wireless communications gateway designed for Industrial IoT and M2M applications. Featuring 3 Ethernet LAN ports, 1 Ethernet WAN port and Dual-SIM slots, the M301 Series provides failover feature among dual SIM and Ethernet WAN for network resilience. With GPS function, it can track accurately the router location and display sync time for quickly managing existing devices.

Supporting RS-232, RS-485 and DI/DO, the M301 series allow you to customize your professional applications in diverse environments. The devices are administrated via web GUI, Telnet, SSH v2 and HTTP/HTTPS. It also provides Modbus for SCADA system connectivity, and MQTT for M2M applications. The critical VPN security supports IPSec, OpenVPN, and GRE, etc. to enhance encryption for authentication and transmission for a wide range of IoT applications and vertical machine-to-machine (M2M) markets.

Built for secure and uninterrupted operation in harsh environments, it offers operating temperature from -20 to 70°C and a flexible input voltage range of 10-32 VDC. Having trusted industrial-grade certificates, Proscend M301 Series is best choices for mission-critical cellular communications.

### Features

- Multi-band support for FDD LTE / TDD LTE / WCDMA / GSM / LTE CAT4.
- 3 x 10/100 Base-TX RJ45 LAN ports; 1 x 10/100 Base-TX RJ45 WAN port.
- Dual-SIM redundant design for failover function.
- Integrated dual detachable antenna against radio interference.
- LED indicators for connection and data transmission status.
- Industrial rated from -20 to +70°C for use in harsh environments.
- Flexible power supply range of 10~32 VDC.
- IEEE 802.11b/g/n Wi-Fi standards compatibility (M301-GW).
- Industrial-grade IP40 aluminum case with DIN-rail mounting.
- GPS connector with gain external antenna for remote tracking.
- IPv4 and IPv6 dual stack management.
- RS-232/RS-485, DI/DO, Modbus and MQTT support.
- VPN tunnels, Firewall, TR069, Diagnostics, advanced routing protocols.

## Specifications

### Cellular Interface

- Standards: (Please see ordering information for optional band)
  - 4G: FDD LTE, TDD LTE
  - 3G: WCDMA
  - 2G: GSM/EDGE
- LTE Data Rate: CAT 4, 150Mbps (DL), 50Mbps (UL)

### Processor & I/O Interface

- High performance 528 MHz CPU with 512 Mbytes of DDR3 memory
- 3 x LAN 10/100 Mbps Ethernet ports
- 1 x WAN 10/100 Mbps Ethernet port
- 2 x SIM Card Slots
- Reset Button
- Console: 1 x RS-232 (9-pin Sub-D)
- 2 x SMA connectors for detachable LTE antenna
- 1 x RP-SMA for Wi-Fi antenna (M301-GW)
- 1 x GPS detachable antenna
- 1 x RS-485 (D+/D-)
- 1 x RS-232 (TXD/RXD)
- 2 x DI, 1 x DO (Alarm +/-)

### Wi-Fi Interface (M301-GW)

- Compliant with IEEE 802.11 b/g/n Wi-Fi standards
- 2.4 GHz - 2.484 GHz radio band for wireless
- 1T1R 150 Mbps wireless operation rate
- Wireless security with WPA-PSK, WPA2-PSK support
- Multiple SSIDs
- Wireless MAC Filtering
- Wireless client isolation

### Physical Characteristics

- Enclosure : Aluminum Case
- Housing : IP40 Protection
- Dimensions (W x H x D) : 60 x 110 x 106 mm
- Weight : 452 g (0.9965 lb)
- Installation : DIN-rail (Default) or Wall Mount (Optional)

### LED Display

- 1 x System status LED (Green)
- 1 x VPN status LED (Green)
- 1 x SIM1 status LED (Green)
- 1 x SIM2 status LED (Green)
- Ethernet status LEDs (Green for LINK/ACT, Yellow for SPEED)
- 2 x Mobile connection strength LEDs (Green)

### Power Supply

- Power Consumption : 7 Watts(Max)
- Power Input : 10 ~ 32 VDC

### MTBF (mean time between failures)

- M301 Series: 148,930 hrs (MIL-HDBK-217-FN2)

### Software

#### Network Protocols:

IPv4, IPv6, IPv4/IPv6 dual stack, DHCP server and client, PPPoE, Static IP, SNTP, GPS sync time, DNS Proxy, Modbus, VRRP, OSPF, Message Queue Telemetry Transport (MQTT Broker), BGP, Flow (Modbus master ↔ MQTT client)

#### Routing/Firewall:

NAT, Virtual Server, DMZ, MAC Filter, URL Filter, IP Filter, VLAN, Static Routing and RIP-1/2, IPS, Policy Route

#### VPN:

OpenVPN, IPSec (3DES, AES128, AES196, AES256, MD5, SHA-1, SHA256), GRE, PPTP, L2TP

#### Wireless Connectivity:

Two SIM for failover/ roaming over/ back up  
Two SIM data usage control  
Seamless multi WAN connections switch

#### Others:

DDNS, QoS, Virtual COM, UPnP, SMS Action, GPS Track Drawing, GPS TCP Push

#### Alarm:

DI, DO, SMS, VPN/WAN Disconnect, SNMP Trap, E-mail, TR069

### Management Software

- Web GUI for remote and local management, CLI
- Dual Image firmware upgrade by Web GUI
- Syslog monitor
- SNMP, TR069
- FOTA (Firmware over the Air)
- Remote management via SSH v2, HTTPS
- Local management via Telnet, SSH v2, HTTP/HTTPS

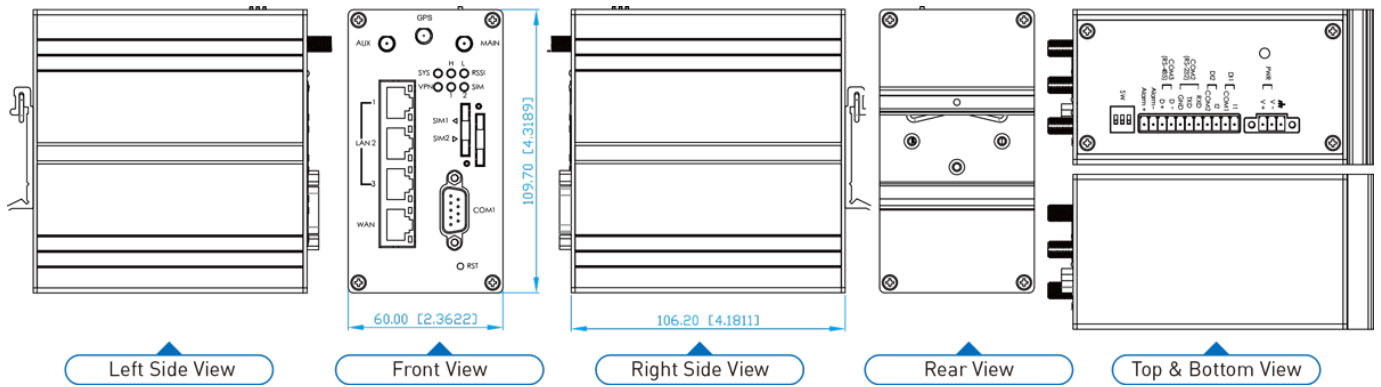
### Environment

- Operating Temperature -20 ~ +70°C
- Storage Temperature -40 ~ +85°C
- Ambient Relative Humidity 10 ~ 95% (non-condensing)
- Humidity 0 ~ 95% (non-condensing)

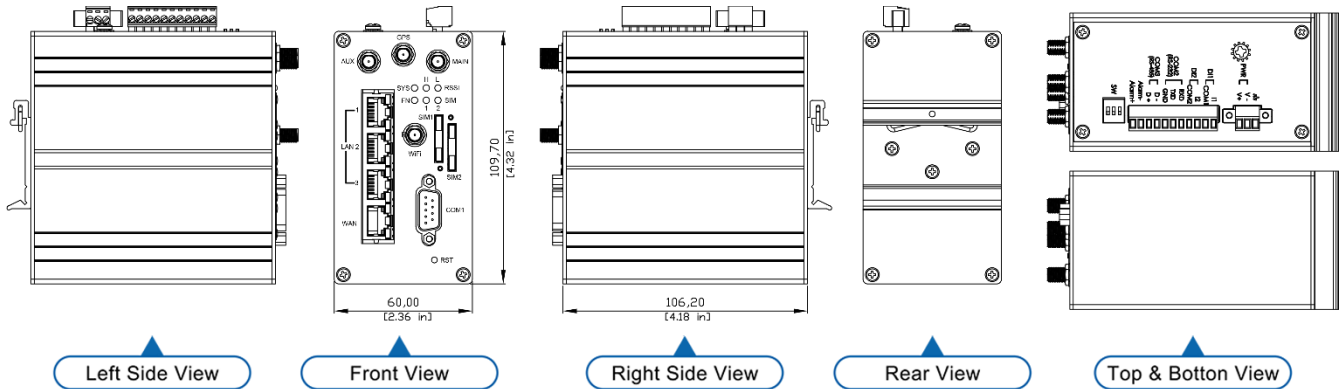
### Standards and Certifications

- **EMC** : CE, FCC
- **EMI** : EN 55032 Class A, FCC Part 15 Subpart B Class A
- **EMS** : EN 55024 / EN 61000-4-2 (ESD) Level 3 / EN 61000-4-3 (RS) Level 3 / EN 61000-4-4 (EFT) Level 4 / EN 61000-4-5 (Surge) Level 3 / EN 61000-4-6 (CS) Level 3 / EN 61000-4-8 (PFMF) Level 4 / EN 61000-4-11 / EN 61000-6-2 (Industrial) / EN 61000-6-4 (Industrial)
- **Rail Traffic** : EN 50155, EN50121-4
- **Vibration** : IEC60068-2-6
- **Safety** : EN60950-1
- **Highly Accelerated Life Test (HALT)**

## Dimensions (M301-G)



## Dimensions (M301-GW)



## Options of Bands

Option	4G		3G	2G	Region
	FDD LTE	TDD LTE	WCDMA	GSM / EDGE	
EU	B1, B3, B5, B7, B8, B20	B38, B40, B41	B1, B5, B8	B3, B8	Europe, Africa, Middle East, Korea, Thailand, India
US	B2, B4, B12		B2, B4, B5		North America
AU	B1, B2, B3, B4, B5, B7, B8, B28	B40	B1, B2, B5, B8	B2, B3, B5, B8	Australia, New Zealand, South Africa, Taiwan
JP	B1, B3, B8, B18, B19, B26	B41	B1, B6, B8, B19		Japan

## Ordering Information

Model Name	Description
M301-G	Industrial 4G LTE Cellular Router
M301-GW	Industrial 4G LTE Cellular Router w/Wi-Fi

**NOTE:** Features and specifications are subject to change without prior notice.