



- MIL-STD 810G
- E24 118R II
- E1 10R
- CCAH194G0100T3

# M500

## Advanced Industrial/In-Vehicle LTE Router

SIM LTE Embedded	Dual SIM Dual LTE Radio	GPS	Gigabit
Power Ignition Sensing	Industrial	Fail Over	Load Balance
802.11n	IPv6 Support	TR-069	

### M500

## Advanced Industrial/In-Vehicle LTE Router

### Overview

The M500 4G LTE Industrial/In-Vehicle Multi-Carrier Router is a high performance all-in-one fixed wireless communications platform with advanced software enabling high availability, reliable and secure wireless connectivity for mission critical applications. The compact rugged design integrates dual SIM dual radio, 4-port Gigabit switch, Wi-Fi access point, embedded GPS with multi-GNSS engine for GPS or GLONASS and ignition power control for in-vehicle applications. The M500 is specifically designed to support a wide range of applications and vertical machine-to-machine (M2M) market segments.

### High Availability and Network Resilience

The M500 is a feature rich industrial class router coupled with robust network processing and Multi-WAN connectivity, purpose built for network resilience and business continuity. The platform support dual SIM and dual LTE radios for carrier redundancy or load balancing between carriers networks. In the event of a connectivity failure of the primary WAN interface, traffic is automatically redirected to the secondary WAN interface. The M500 will also fallback when the primary interface connection is restored. This functionality operates regardless of whether the primary connection is LTE or a wired connection such as fiber, cable or DSL. Load balancing and traffic prioritization mechanisms can be enabled to enhance failover performance and maximize bandwidth utilization for critical applications delivery.

### Carrier-grade Wireless LAN

The M500 integrates a 802.11n access point supporting data rates of up to 300Mbps. Security functionality includes: WEP 64/128, WPA(PSK), WPA2(PSK), Mixed WPA/WPA2(PSK), SSID broadcast disable, Wireless MAC address filtering and access control over the Wireless LAN. Allowing for Wi-Fi Hotspot functionality anywhere there is cellular signal. The captive portal enables highly secure connectivity with multiple authentication options and extensive controls for access and bandwidth management.

### High performance & reliability and easy to manage and access

- Offers 4G LTE broadband connectivity (3G fallback is optional)
- Multi-WAN interfaces: Dual SIMs/ Dual Modules and EWAN for network resilience and reliable connectivity
- Network expandability - load balancing and reliable connectivity - auto-failover/fallback.
- Embedded GNSS option for real-time asset tracking and location data-based applications\*3
- Local and Remote management via Web GUI, SNMP or CWMP(TR-069)

### Compact and unobtrusive design

- Small form factor with multiple mounting options, easily installed by a single person
- Ignition power control option when mounted within vehicles

### Secure VPN Connections

- Embedded IPSec, PPTP, L2TP, GRE and OpenVPN secure VPN connection with powerful encryption

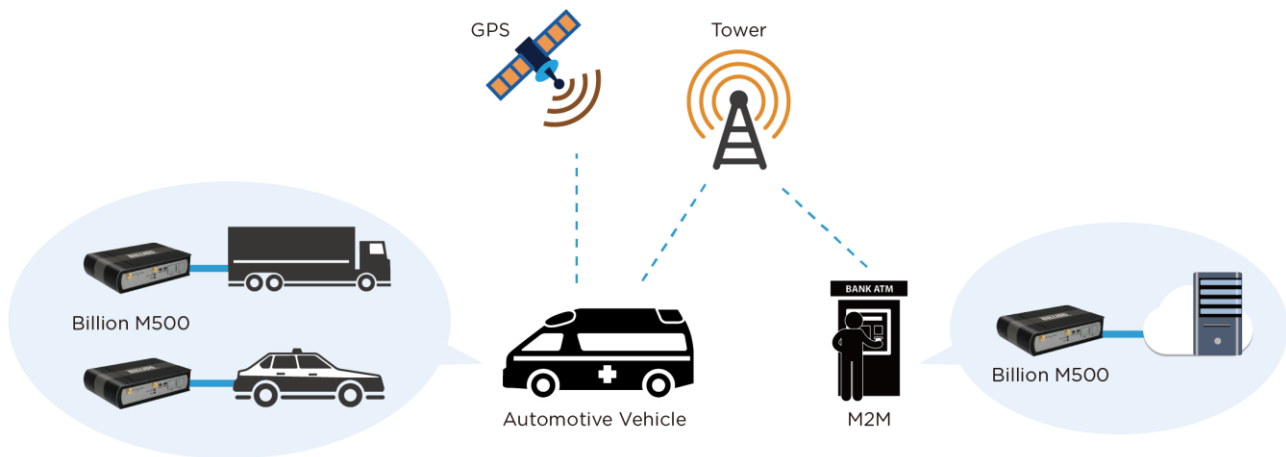
### Designed for challenging / rugged deployments

- Hardened enclosure with Industrial-graded components
- Designed to withstand heat, humidity and protect from shock, vibration, etc.
- E-Mark certified
- MIL-STD-810G 514.6, 516.6

### Ideal Solution for

- Business Continuity, Logistics/Transportation and Fleet, Public Safety applications.

## Application Diagram



## Features & Specifications

### ■ Availability and Resilience

- Dual SIMs/ Dual Modules
- Dual-WAN Interfaces (4G LTE, GbE WAN)

### ■ Embedded 4G/LTE\*1

- Embedded high performance 4G LTE module
- Supported frequency bands: (4G LTE)\*1
  - LTE-FDD: B1, B3, B5, B7, B8, B20, B28, B32
  - LTE-TDD: B38, B40, B41
- Supported 2xCA:
  - B1+B1/ B5/ B8/ B20/ B28;
  - B3+B3/ B5/ B7/ B8/ B20/ B28;
  - B7+B5/ B7/ B8/ B20/ B28;
  - B20+B32; B38+B38; B40+B40; B41+B41
- Supported data rate: (4G LTE)
  - LTE-FDD: Max 300Mbps/ 50Mbps (DL/ UL)
  - LTE-TDD: Max 226Mbps/ 28Mbps (DL/ UL)
- Downlink MIMO support: 2x2, 4x2

### ■ Network Protocols and Features

- Dual WAN Failover/ Failback
- Dual WAN Load Balancing
- IPv4, IPv6, IPv4/IPv6 dual stack\*2
- Dual APN\*2
- Keep Alive
- IP Pass-Through
- NAT, Virtual Server and DMZ
- Static Routing, Dynamic Routing (RIP v1/v2, OSPF, BGP)
- SNTP, DNS relay and DDNS
- Universal Plug and Play (UPnP) compliant
- Supports DHCP server/client/relay

### ■ Firewall

- Built-in NAT Firewall
- Stateful Packet Inspection (SPI)
- Prevents DoS attacks including Land Attack, Ping of Death, etc.
- Access Control
- IP Filtering, MAC Filtering, URL Filtering
- VPN Pass-through

### ■ Virtual Private Network (VPN)

- IPSec
- PPTP
- L2TP
- GRE
- OpenVPN

### ■ Wireless LAN

- Compliant with IEEE 802.11n standard
- Up to 300Mbps wireless operation rate
- WPS (Wi-Fi Protected Setup) for easy setup
- 64/128 bits WEP supported for encryption
- Wireless security with WPA-PSK, WPA2-PSK, Mixed WPA/WAP2-PSK
- AP and WDS Operational Modes
- Multiple SSID (4 SSIDs), BSSID
- Wireless MAC Filtering
- Wi-Fi Client Isolation
- Wi-Fi Hotspot with Captive Portal
- Support RADIUS authentication
- Wi-Fi client rate-limiting

### ■ Global Navigation Satellite System (GNSS)\*3

- Embedded multi-GNSS engine for GPS or GLONASS system

### ■ USB Application Server

- Storage: FTP server and Samba server

### ■ Management

- Password protection for system management
- Web-based GUI for remote and local management
- Firmware upgrade and configuration data upload and download via web-based GUI
- CWMP (TR-069)\*2, SNMP
- 4G LTE Usage Allowance
- Remote System Log monitoring
- Scheduling Auto-Reboot
- Physical layer/protocol diagnostic test tool

### ■ Hardware Specifications

#### Physical Interface

- WAN: 4G LTE
  - Optional: Single Module/SIM
  - Dual Modules/SIMs
- Ethernet LAN: four(4) port 10/100/1000Mbps auto-crossover (MDI/ MDI-X) switch
- USB 2.0 Host: two(2) ports
- Mini USB Console: two(2) ports
- Reset Button
- Wireless On/Off and WPS Push Button
- Power Connector: 4-pin connector with ignition sensing
- LED Indicators
- Antenna:
  - 4G LTE: four(4) detachable antennas(dual modules) two(2) detachable antennas(single module)
  - GPS: one(1) detachable active antenna (option)
  - Wireless: two(2) detachable antennas

#### Power Specifications

- Input: DC 10V~56V

#### Physical Specifications

- Dimensions: 199.2 x 46.6 x 132.7 mm (199.2 x 46.6 x 149.1 mm - antenna connector protrusion included)
- Weight: 1.1 kg

#### Operating Requirements

- Operating: -40°C to 60°C (-40°F to 140°F)
- Humidity: 20 ~ 95% non-condensing

#### Notes:

1. The 4G LTE is dependent on your local service provider.
2. Only upon request for Telco/ ISP tender projects.
3. The support for GPS and/or GLONASS functions depends on the equipped module's capabilities.
4. Specifications in this datasheet are subject to change without prior notice.