Square One .Network

BILLION ®

LTE Embedded | Dual SIM Dual LTE Radio | GPS | Gigabit

Power Ignition Sensing | Industrial | Fail Over | Load Balance

802.11n | IPv6 Support | TR-069
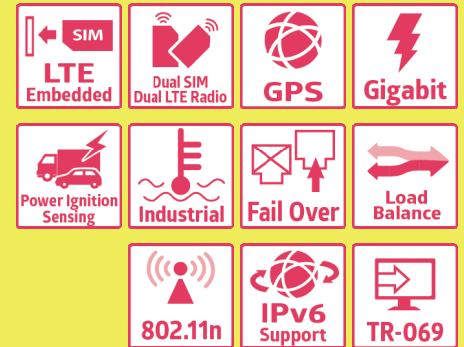
Billion M500

4G/LTE Industrial/In-Vehicle Multi-Carrier Router

Overview

The Billion 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 concurrent-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 bit, WPA, WPA2 (PSK, TKIP and AES, 802.1X, SSID broadcast disable and wireless MAC address filtering and MSSID with Client Isolation to enhance the level of transmission security and access control over the Wireless LAN.

High performance & reliability and easy to manage and access
- Offers 4G/LTE broadband connectivity (3G Fallback is optional)
- Multi-WAN interfaces: Dual SIM/Dual Radio and EWAN for network resilience and reliable connectivity
- Embedded GPS option for real-time asset tracking and location data-based applications
- Local and Remote management via Web GUI, SNMP or CWMP(TR-069)

QoS (Quality of Service)
- Traffic prioritization based-on IP protocol, port number, and IP address

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

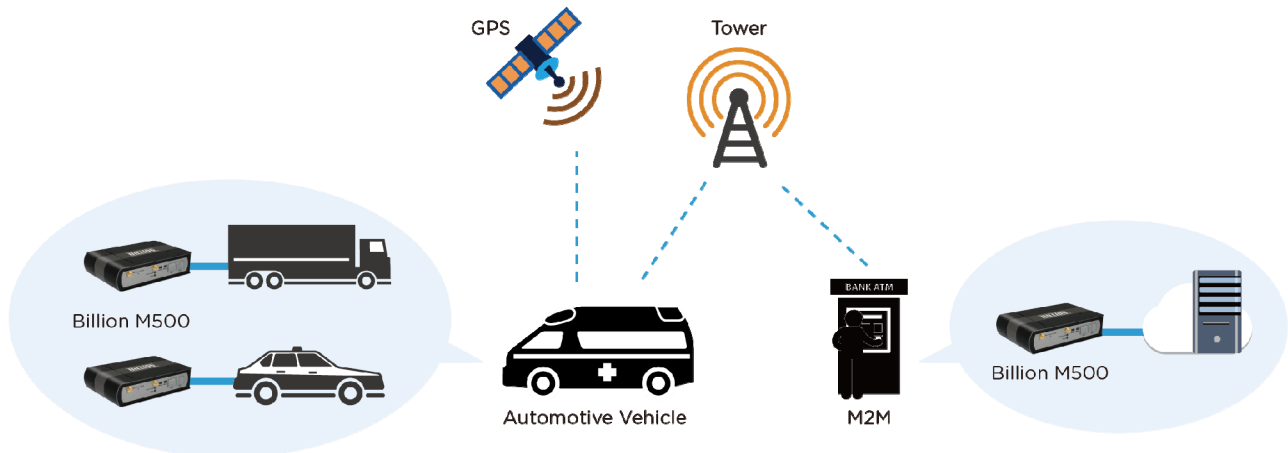### Designed for challenging / rugged deployments
- Hardened enclosure with Industrial-graded components
- Designed to withstand heat, humidity and protect from shock, vibration, etc.
- MIL-STD-810G Compliant

Ideal Solution for
- Business Continuity, Logistics/Transportation and Fleet, Public Safety/FirstNet applications.

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Application Diagram

GPS   Tower

Billion M500

Automotive Vehicle   M2M   Billion M500

BANK ATM

Features & Specifications

■ Availability and Resilience
- Dual-WAN Interfaces (Dual LTE Modules)
- Auto fail-over and failback
- Load Balancing

■ Supported Frequency Bands
- Primary WAN LTE: FDD and TDD (Bands depend on module configuration) [*1]
- Secondary WAN LTE: Optional (Bands depend on module configuration) [*1]

■ Network Protocols and Features
- IPv4, IPv6, IPv4/IPv6 dual stack[*2]
- NAT, Static Routing and RIP-1/2
- Virtual Server and DMZ
- SNTP, DNS relay and DDNS
- IGMP Snooping and IGMP Proxy
- Supports DHCP server/client/relay
- Supports port-based Virtual LAN (VLAN)

■ Quality of Service Control
- Traffic prioritization based-on IP protocol, port number and IP address

■ 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
- Password protection for system management
- VPN Passthrough

■ Wireless LAN
- Compliant with IEEE 802.11n standard
- Backward compatible with IEEE 802.11b and 802.11g standards
- 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
- Wireless Client Isolation

■ USB Application Server
- Storage: FTP server and Samba server

■ Management
- Web-based GUI for remote and local management
- Firmware upgrade and configuration data upload and download via web-based GUI
- CWMP(TR-069), SNMP
- Universal Plug & Play (UPnP)
- Access control by services or protocols
- Network Time Protocol (NTP)
- Syslog monitoring
- Physical layer/protocol diagnostic test tool

■ Hardware Specifications
Physical Interface
- Antenna:
  - Wireless: two(2) detachable antennas
  - 3G/4G LTE: four(4) detachable antennas
  - GPS: one (1) detachable antenna
- WAN: 3G/4G LTE
- USB 2.0 : two (2) ports
- Mini USB Console: two (2) ports
- Ethernet LAN: 4-port 10/100/1000Mbps auto-crossover (MDI/ MDI-X) switch
- SIM Card: two (2) slots
- Reset Button
- Wireless On/Off and WPS Push Button
- Power jack
- LED Indicators

■ Power Specifications
- Input: DC 10V~56V

■ Physical Specifications
- Dimensions: 7.25"(W) x 1.91"(H) x 5.31"(D) (184.25 mm x 48.5 mm x 135 mm)
- Weight: 1.07kg (2.36lbs)

■ 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. Future release and only upon request for Telco/ ISP tender projects.
3. Specifications in this datasheet are subject to change without prior notice.

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