# LAN89303

## High-Performance, Three Port, 10/100 Managed Ethernet Switch with MII/RMII for Automotive Applications

## Summary

The LAN89303 is a full-featured, three-port, 10/100 managed Ethernet switch designed for embedded applications where performance, flexibility, ease of integration and system cost control are required. It combines all the functions of a 10/100 switch system, including the switch fabric, packet buffers, buffer manager, Media Access Controllers (MACs), PHY transceivers and serial management. The LAN89303 complies with the IEEE 802.3 (full/half-duplex 10Base-T and 100Base-TX) Ethernet protocol specification and 802.1D/802.1Q network management protocol specifications, enabling compatibility with industry-standard Ethernet and Fast Ethernet applications. The LAN89303's performance, features and small size make it well-suited for a wide variety of automotive applications including diagnostics, gateway services and in-vehicle engineering development.

### TrueAuto

TrueAuto is Microchip's automotive quality process. It has proven its ability to deliver leading-edge quality and services for IC device products to fulfill the needs of the most demanding automotive customers. TrueAuto is a proven total automotive-grade quality approach. TrueAuto IC device robustness begins with Microchip's design for reliability techniques within the silicon IC itself: automotive-grade robustness and testability are designed into the IC. Once available in silicon, the IC is fully-characterized and qualified over a multitude of operating parameters to prove quality under the harshest conditions. In this, Microchip's TrueAuto approach significantly exceeds the usual automotive reliability standards and customer-specific requirements and goes far beyond the stress tests prescribed by the AEC-Q100 specifications. During the fabrication of TrueAuto products, extensive technologies and processes, such as enhanced monitors are used in order to continuously drive improvements in accordance with Microchip's zero defects per million (DPM) goals.

## Applications

- Diagnostic interface for dealership service bay
- Fast software download interface with an On-board Diagnostic (OBD) connector
- Gateway service interface for dealership, aftermarket and repair shop
- In-vehicle engineering development interface
- Vehicle manufacturing test interface for production plant assembly line
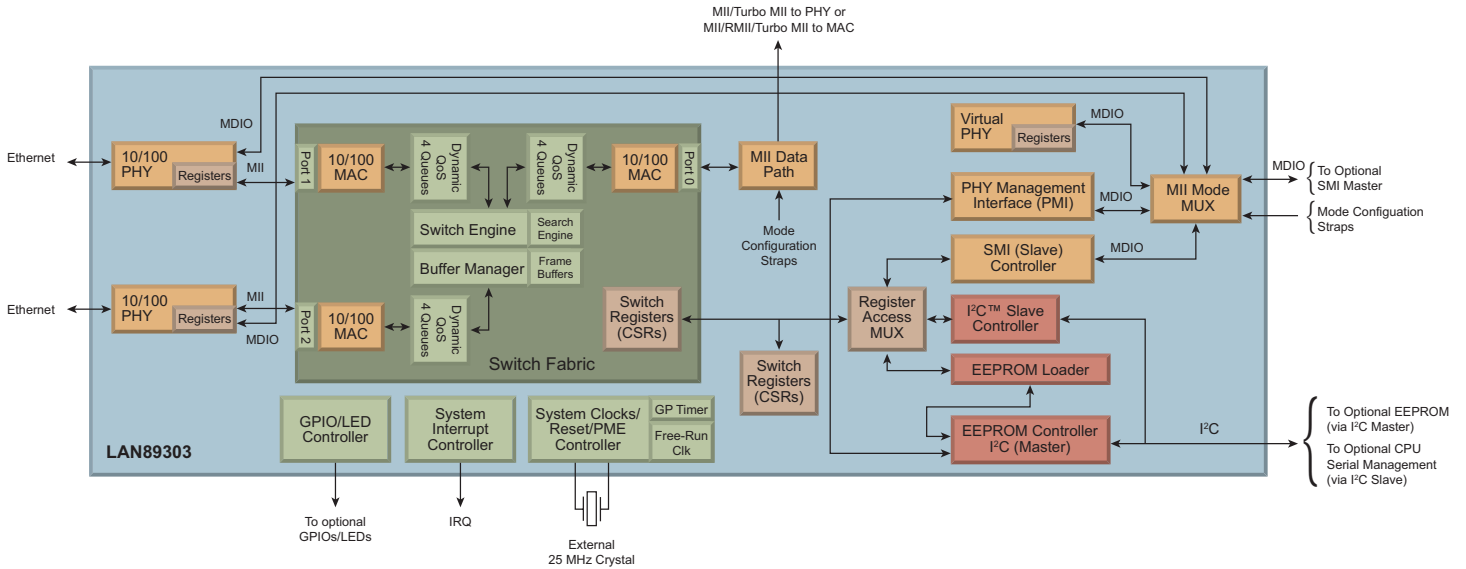- Legislated emissions check and/or safety inspections



## Highlights

- Designed, fabricated, tested, characterized and qualified for automotive applications
- TrueAuto design, service and support
- Three-port switch provides VLAN, QoS packet prioritization, rate limiting, IGMP monitoring and management functions
- IEEE 802.3 and 802.1D/802.1Q-compliant
- 10Base-T/100Base-TX and HP Auto-MDIX support
- Up to 200 Mbit/s via Turbo MII
- Serial management
  - $I^2C$™ (slave) access to all internal registers
  - MIIM (MDIO) access to PHY-related registers
  - SMI (extended MIIM) access to all internal registers
- Unique virtual PHY feature simplifies software development by mimicking the multiple switch ports as single port PHY
- Single 3.3V power supply
- 56-pin (8 × 8 mm) QFN, RoHS-compliant package
- Temperature range: −40 to +85°C

![Microchip logo]

# Internal Block Overview



## Ordering Information

The LAN89303 is available as:

| | Order Number |
|---|---|
| **LAN89303AM Tray** | B10281 |
| **LAN89303AMR Tape and Reel** | B10280 |

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