

LAN9303/9303M

Industry's Smallest 3-port 10/100 Managed Ethernet Switches with Single/Dual MII/RMII/Turbo MII Support

SMSC's LAN9303 and LAN9303M are high-performance, small-footprint, full-featured 3-port managed Ethernet switches. Both devices are application-optimized for consumer electronics designs which have a rapid development cycle and require low-cost switching functionality, flexibility and ease of integration.

Featuring the industry's smallest form factor 3-port switches, the LAN9303/9303M support compact PCB design and single (LAN9303) or dual (LAN9303M) MII/RMII/Turbo MII (Media Independent, Reduced Media Independent and Turbo Media Independent Interfaces). The LAN9303M's second MII/RMII/Turbo MII port enables direct connectivity with home networking technologies such as MoCA®, HomePlug®, HomePNA™ (HPNA) and Optical Fiber, among others. Both devices support Turbo MII mode to accomplish network speeds up to 200 Mbps. The virtual PHY feature mimics a single PHY connection through the MII/RMII/Turbo MII interface to the host SoC, which can reduce software development time. This feature also allows system designers to swap the single PHY and Ethernet switch to create multiple SKUs from the same software driver. Additionally, the LAN9303/9303M offer the industry's highest ($\pm 8\text{kV}/15\text{kV}$) per-port ESD protection.

The LAN9303/9303M switches combine all of the functions of a 10/100 system, including the switch fabric, packet buffers, buffer management, MACs, PHY transceivers and optional serial management functions. Both devices comply with IEEE 802.3 10BASE-T and 100BASE-TX Ethernet protocol specifications, enabling compatibility with industry standard Ethernet and Fast Ethernet applications.

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Highlights

- High-performance, full-featured 3-port switches with per-port IEEE 802.1Q VLAN support (up to 16 VLAN groups)
- Industry's highest ($\pm 8\text{kV}/15\text{kV}$) per-port ESD protection
- IGMP v1/v2 monitoring for multicast packet filtering
- Up to 200 Mbps network speed via a Turbo MII interface
- Optional EEPROM or external CPU serial management support via an I²C™ interface
- Virtual PHY feature simplifies software development by mimicking multiple switch ports as a single-port PHY
- Integrated regulators require a single 3.3V supply
- 42 per-port MIB counters for efficient network management
- Industrial temperature range (-40° to 85°C) options available (LAN9303i/9303Mi)
- Package options:
 - LAN9303: 8x8mm, 56-pin QFN package for single MII/RMII/Turbo MII
 - LAN9303M: 10x10mm, 72-pin QFN package for dual MII/RMII/Turbo MII

Target Applications

- Cable, Satellite, and IP Set-top Boxes (STBs)
- Digital Televisions (DTVs)
- Digital/Personal Video Recorders (DVRs/PVRs)
- VoIP/Video Phone Systems
- Home Gateways/Consumer Audio/Video
- Test/Measurement Equipment
- Industrial Automation and Control

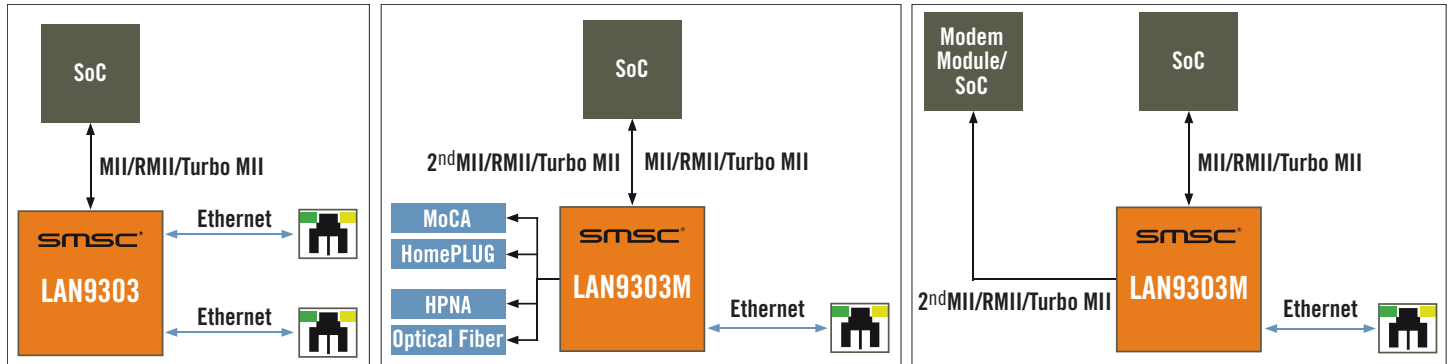


Key Features

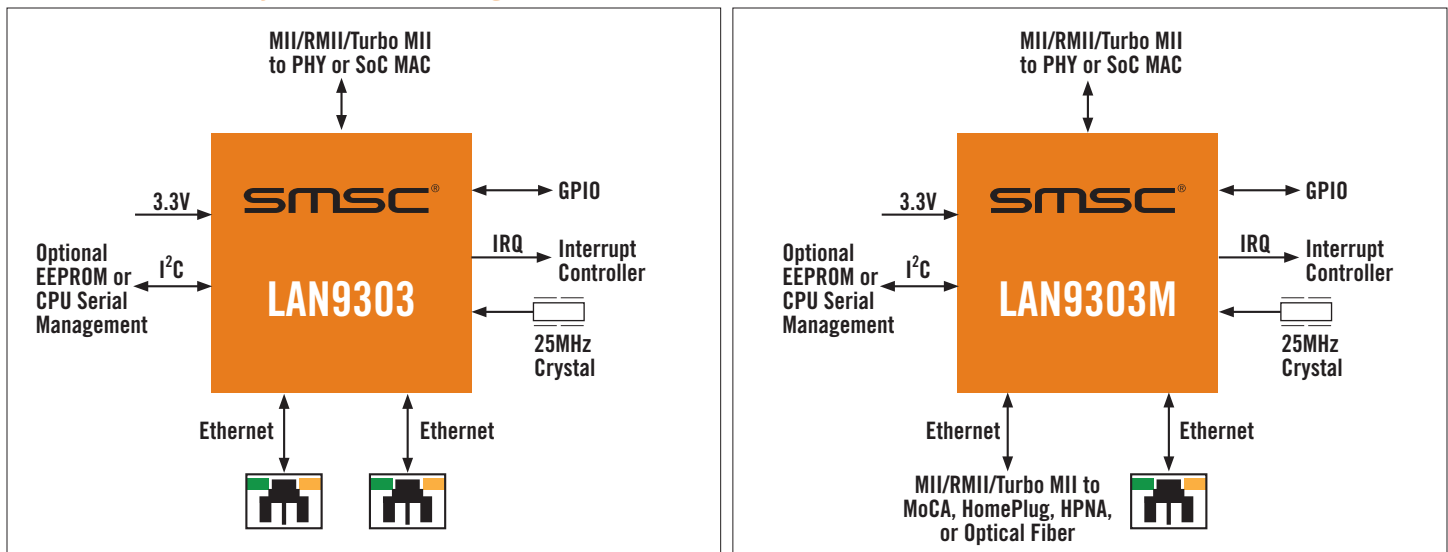
Benefits

Industry's smallest form factor	Reduces PCB space
Industry's best ESD protection	Integrated $\pm 8\text{kV}/15\text{kV}$ per-port ESD protection
Supports second MII/RMII/Turbo MII	Increases design flexibility and enables connection to MoCA, HomePlug, HPNA, Optical Fiber or a second SoC
Virtual PHY	Mimics a single PHY connection to the host SoC to help reduce software development time
Turbo MII	Supports network speeds up to 200 Mbps
Per-port VLAN	Increases network performance by filtering and prioritizing packets

LAN9303/9303M Application Examples



LAN9303/9303M System Block Diagrams



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