LAN89530

USB 2.0 to 10/100 Ethernet Controller for Automotive Applications

Features

- Designed, fabricated, tested, characterized and qualified for automotive applications
- TrueAuto™ design, service and support
- Single-chip, Hi-Speed USB 2.0 to 10/100 Ethernet controller
- Compliant with IEEE 802.3/802.3u standards
- Integrated 10/100 Ethernet MAC with full-duplex support and 10/100 Ethernet PHY with HP Auto-MDIX* support
- Integrated USB 2.0 Hi-Speed device controller and Hi-Speed PHY
- External MII and Turbo MII (available for speeds up to 200 Mbps)
- Implements reduced power operating modes
- Flexible address filtering modes
- Integrated EEPROM controller
- Single, external 3.3 V I/O power supply
- 56-pin (8 x 8 mm) QFN lead-free, RoHS-compliant package
- Temperature range: -40 °C to +85 °C

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 inspections for emissions and/or safety checks

Description

SMSC's LAN89530 was specifically designed to provide a high-performance, low-cost USB to 10/100 Ethernet connectivity solution with a Hi-Speed USB interface. The internal USB device controller is USB 2.0-compliant and implements Control, Interrupt and Bulk-in and Bulk-out USB endpoints. SMSC's UniClock™ technology simplifies the clocking scheme and reduces system BOM costs by using a single 25 MHz crystal for both USB and Ethernet connectivity – without the need for additional components when adding USB hubs.

* HP Auto-MDIX eliminates the need for special "crossover" cables when connecting LAN devices together.

Ordering Information

The LAN89530 is available as:

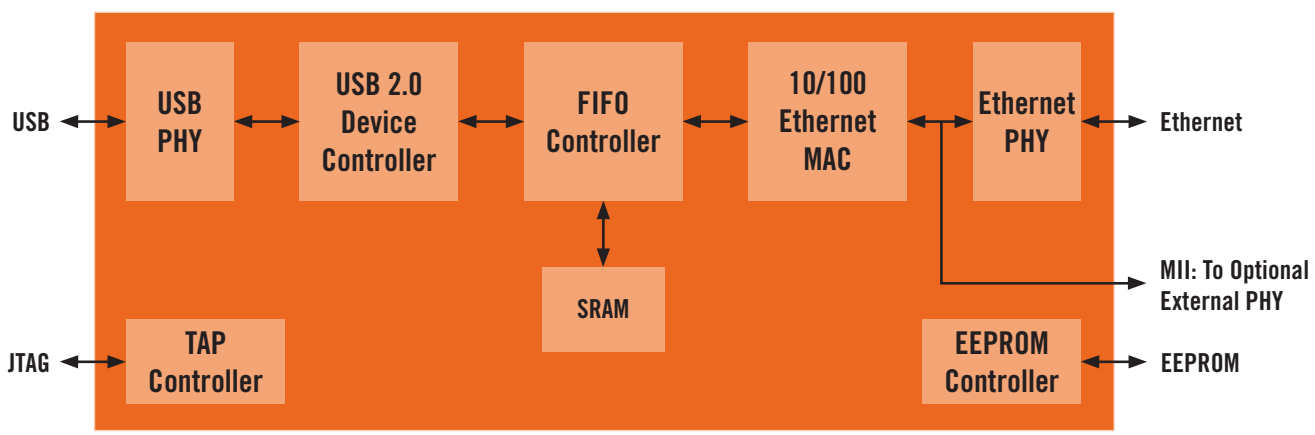
- LAN89530AM Tray
- LAN89530AMR Tape & Reel

Applications, well-suited for the LAN89530 include a diagnostic interface for dealership service bay, a fast software download interface with an OBD connector and an in-vehicle engineering development interface, among others. The LAN89530 also supports auto-negotiation, auto-polarity correction, HP Auto-MDIX and is compliant with IEEE802.3 and 802.3u standards. An external MII provides support for an external PHY which enables HomePNA® or HomePlug® functionality. Multiple power management features are provided, including various low-power modes, as well as Magic Packet, Wake-on-LAN and Link Status Change wake events. These events can be programmed to initiate a remote USB wakeup. A PCI-like PME wake is also supported when the USB host controller is disabled. Additionally, SMSC offers its complimentary and confidential LANCheck® online design review services to customers who select our products for their application design-in.*

TrueAuto

TrueAuto is SMSC'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 SMSC'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, SMSC'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 SMSC's zero Defects per Million (DPM) goals.

System Block Diagram



* LANCheck online design review service requires an SMSC e-Services account and is subject to the terms and conditions stated on SMSC's website.

SMSC is committed to working toward a sustainable environment. We endeavor to make continual improvements in natural resource conservation through efficient product design and global operations thereby reducing greenhouse gas emissions generated by our products and facilities. Our environmental life cycle process seeks to reduce our carbon footprint through product life and recyclability and efficient use of materials, energy and transportation. We remain committed to promoting smart energy policies across our global organization.

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