

LAN9500/9500A

Hi-Speed USB 2.0 to 10/100 Ethernet Controllers

SMSC's LAN9500 and LAN9500A Hi-Speed USB 2.0 to 10/100 Ethernet controllers provide a high-performance, cost-competitive USB to Ethernet connectivity solution containing an integrated 10/100 Ethernet PHY, Hi-Speed USB 2.0 PHY, Hi-Speed USB 2.0 controller, 10/100 Ethernet MAC, TAP controller, EEPROM controller and FIFO controller in a compact 56-pin QFN package.

The LAN9500/9500A support $\pm 8\text{kV}$ HBM and $\pm 15\text{kV}$ air discharge ESD protection and require only a single 25MHz crystal, which helps to keep BOM costs for external components to a minimum. An external MII and Turbo MII interface provides support for Fast Ethernet, HomePlug[®] and HomePNA[™] (HPNA) functionality.

Both devices feature SMSC's proprietary UniClock[™] technology and the LAN9500A incorporates NetDetach[™] technology. UniClock simplifies the clocking scheme and reduces system BOM costs by using a single 25MHz crystal for both USB and Ethernet connectivity – without the need for additional components when adding USB hubs. NetDetach allows for up to a 25% reduction in system power by enabling the host CPU to enter a low-power state when Ethernet is inactive. Both devices are available in commercial (0° to 70°C) and industrial temperature range (-40° to 85°C) options. Additionally, SMSC's complimentary and confidential LANCheck[®] and USBCheck[™] online design review services are available for customers who have selected our products for their application design-in.*

Highlights

- $\pm 8\text{kV}$ HBM and $\pm 15\text{kV}$ air discharge ESD protection
- Requires only a single 25MHz crystal
- EEPROM-less design option helps to reduce BOM costs
- Implements reduced power operating modes including enhanced energy detect power-down
- Supports numerous power management features including Wake-On LAN, Magic Packet[™] and Link Status Change
- External MII and Turbo MII (available for speeds up to 200Mbps)
- 8x8mm, 56-pin QFN package well-suited for compact designs
- Industrial temperature range options available (LAN9500i/9500Ai)

Target Applications

- PC Docking Stations
- Netbooks and Ultra-mobile PCs (UMPCs)
- Mobile Internet Devices (MIDs)
- Digital TVs/Video Recorders/Set-top Boxes
- Network Printers
- Gaming Consoles
- Stand-alone USB to Ethernet Dongles
- Embedded Systems
- Industrial Applications

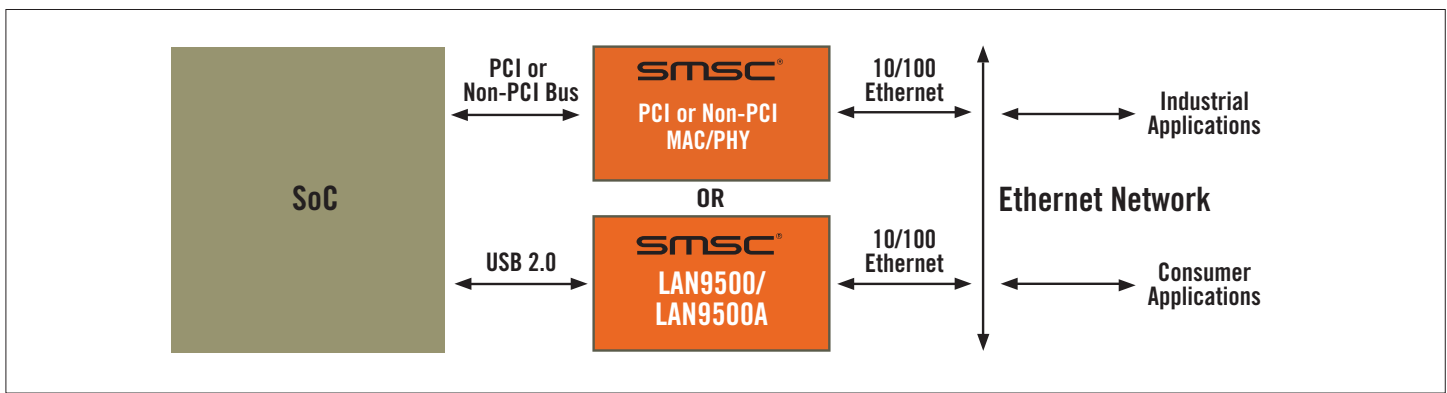
Key Features

NetDetach technology	Allows CPU to enter low-power state when Ethernet is inactive
UniClock technology utilizing a single 25MHz crystal	Reduces BOM component count and cost
$\pm 8\text{kV}$ HBM and $\pm 15\text{kV}$ air discharge ESD protection	Reduces BOM component count and cost
Hi-Speed USB 2.0 interface	Easy and flexible interface simplifies PCB design to place Ethernet connection anywhere in the system
Multiple Operating Systems supported: Windows [®] 7, Windows XP, Windows Vista [®] , Windows CE, Windows Mobile [®] , Mac [®] , Linux [®] and VxWorks [®]	Diverse applications supported

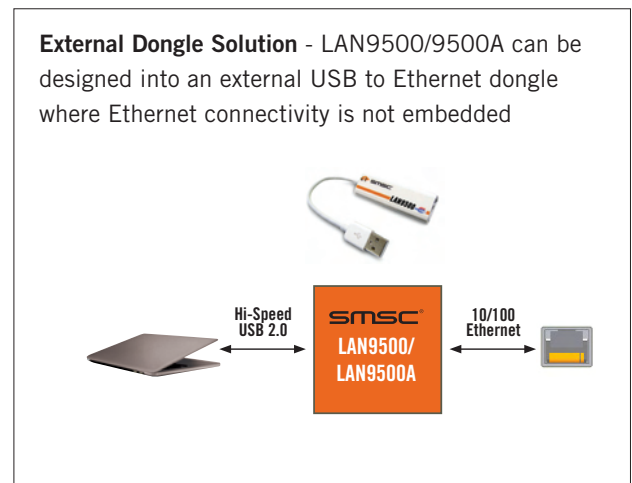
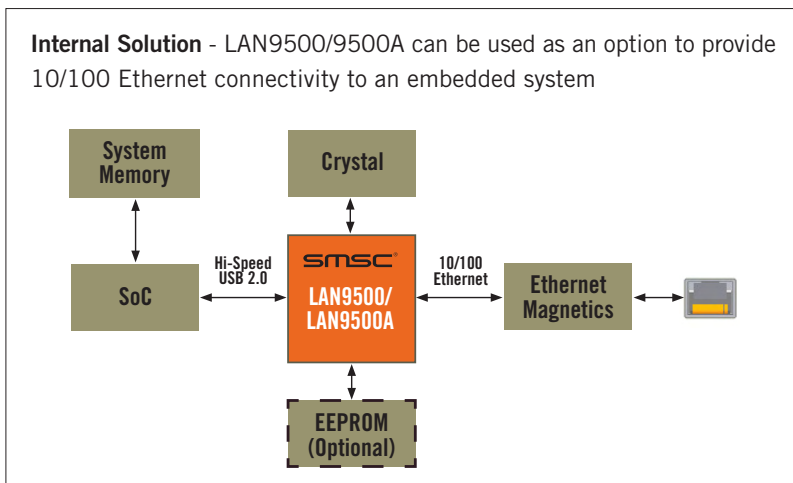
Benefits



USB 2.0 – A New Option for Ethernet Connectivity



LAN9500/9500A Application Examples



Which SMSC Device is Right for Your Design?

	Ethernet	±8kV/±15kV ESD Protection	NetDetach Technology	UniClock Technology	EEPROM-less Support	Full PME Support	Commercial Temp Option (0° to 70°C)	Industrial Temp Option (-40° to 85°C)
LAN9500	10/100	Yes		Yes			Yes	
LAN9500i	10/100	Yes		Yes				Yes
LAN9500A	10/100	Yes	Yes	Yes	Yes	Yes	Yes	
LAN9500Ai	10/100	Yes	Yes	Yes	Yes	Yes		Yes
LAN7500	10/100/1000	Yes	Yes	Yes	Yes	Yes	Yes	
LAN7500i	10/100/1000	Yes	Yes	Yes	Yes	Yes		Yes

*LANCheck and USBCheck online design review services require an SMSC e-Services account and are subject to the terms and conditions stated on SMSC's website.

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For more information visit www.smSC.com or call 1.800.443.SEMI

SMSC 80 Arkay Drive, Hauppauge, NY 11788

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