



LAN8700



Industry's Smallest Full-Featured 10/100 Ethernet Transceiver

SMSC's LAN8700 and industrial temperature-rated LAN8700i transceivers feature HP Auto-MDIX* support for high-performance Ethernet applications. Both devices leverage SMSC flexPWR™ technology, which provides a flexible power management architecture that can be configured to optimize total system power for customers who require a smaller footprint and lower power solution without compromising on features. An integrated 3.3V to 1.8V regulator can be enabled for single supply operation, or disabled to save power if an external 1.8V supply is available. Additional system power can be saved by scaling the I/O voltage to the lowest voltage possible within the configurable 1.6V to 3.6V range. Many of today's higher performance ASICs, SoCs and FPGAs have migrated to aggressive process geometries which require lower I/O voltages. The LAN8700 and LAN8700i also feature the industry's best ESD performance ($\pm 8\text{kV}$ HBM, $\pm 8\text{kV}$ contact and $\pm 15\text{kV}$ air discharge IEC), based on independent lab test results.**

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

**Results are based on actual measurements on evaluation platforms developed by SMSC, and are meant only as a general guideline, not as a guarantee. Actual customer results may vary based on a number of factors, including board layout and measurement technique.

Target Applications

- Set-Top Boxes
- Network Printers
- Network Servers
- LAN on Motherboard
- 10/100 PCMCIA/CardBus
- Embedded Telecommunications
- Video Record/Playback Systems
- Cable Modems/Routers
- DSL Modems/Routers
- Digital Video Recorders
- Personal Video Recorders
- IP and Video Phones
- Wireless Access Points
- Digital Televisions
- Digital Media Adaptors/Servers
- POS Terminals
- Automotive Networking
- Gaming Consoles
- Security Systems
- Power Over Ethernet (POE)
- Access Control

Features and Benefits

FEATURES	BENEFITS
$\pm 8\text{kV}$ HBM ESD protection	Allows for reduced BOM parts count and cost
$\pm 8\text{kV}$ contact and $\pm 15\text{kV}$ air discharge IEC61000-4-2 ESD protection without external protection devices	Reference PCB design with proven ESD performance
Variable I/O voltage range from +1.6V to +3.6V	Supports low voltage ASIC, SoC and FPGA system roadmaps
Energy detect power-down mode	Conserves system power by shutting down inactive circuit blocks
Integrated 3.3V to 1.8V regulator	Only a single 3.3V supply is required
Internal regulator disable mode	Reduces power consumption if a 1.8V system supply is available
HP Auto-MDIX support	Performs automatic crossover cable detection and correction
Drives cable length greater than 170 meters	Exceeds IEEE standard 100 meter requirements
Supports the Media Independent Interface (MII) and Reduced Media Independent Interface (RMII)	Covers the industry's two most popular interfaces
Industrial temperature-rated (-40°C to 85°C) LAN8700i	Designed to perform in rugged industrial environments
36 QFN lead-free, RoHS-compliant package (6 x 6 x 0.9mm)	Low profile, small footprint package for compact designs

What is SMSC flexPWR™ Technology?



SMSC flexPWR provides:

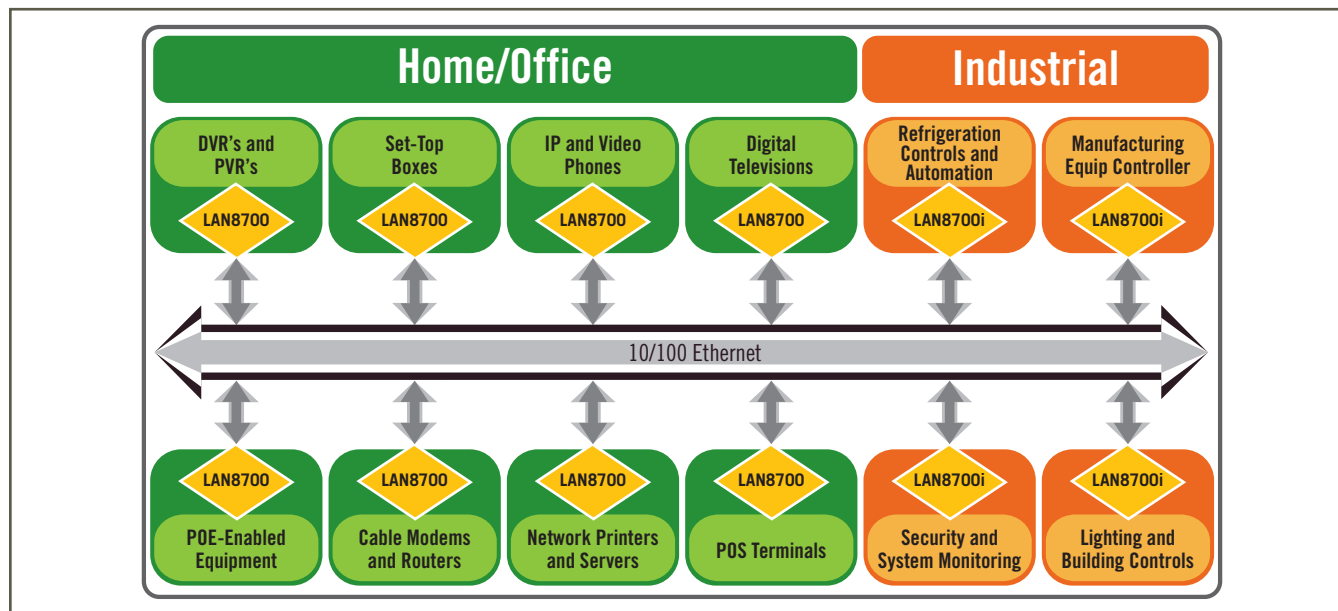
- Flexible technology to optimize power consumption
- Integrated 1.8V regulator with disable feature
- Ability to utilize on-board, high-efficiency 1.8V switcher
- Variable I/O voltage to support a wide variety of processor choices
- Energy Detect Power Down capability

SMSC Full-Featured Transceivers vs. the Competition

	MAC Interface	I/O Voltage Range	Integrated 3.3V to 1.8V Reg w/ Reg Disable	ESD Performance w/o External Protection**	Energy Detect Power Down Capability	Number of LED's Supported	Temperature Range
SMSC Full-Featured Transceivers	MII and RMII	1.6V to 3.6V Range	YES	YES	YES	4	Commercial or Industrial
Other Partial-Featured Transceivers	MII Only	3.3V Only	NO	NO	NO	2	Commercial Only

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Wide Range of Applications for LAN8700 and LAN8700i



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