LAN8720/LAN8720i

Small Footprint RMII 10/100 Ethernet Transceiver with HP Auto-MDIX Support

PRODUCT FEATURES

Data Brief

Highlights

- Single-Chip Ethernet Physical Layer Transceiver (PHY)
- Comprehensive flexPWR® Technology
  - Flexible Power Management Architecture
  - Power savings of up to 40% compared to competition
  - LVCMOS Variable I/O voltage range: +1.6V to +3.6V
  - Integrated 1.2V regulator
- HP Auto-MDIX support
- Miniature 24 pin QFN lead-free RoHS compliant package (4 x 4 x 0.85mm height).

Target Applications

- Set-Top Boxes
- Networked Printers and Servers
- Test Instrumentation
- LAN on Motherboard
- Embedded Telecom Applications
- Video Record/Playback Systems
- Cable Modems/Routers
- DSL Modems/Routers
- Digital Video Recorders
- IP and Video Phones
- Wireless Access Points
- Digital Televisions
- Digital Media Adaptors/Servers
- Gaming Consoles
- POE Applications

Key Benefits

- High-Performance 10/100 Ethernet Transceiver
  - Compliant with IEEE802.3/802.3u (Fast Ethernet)
  - Compliant with ISO 802-3/IEEE 802.3 (10BASE-T)
  - Loop-back modes
  - Auto negotiation
  - Automatic polarity detection and correction
  - Link status change wake-up detection
  - Vendor specific register functions
- Power and I/Os
  - Various low power modes
  - Integrated power-on reset circuit
  - Two status LED outputs
  - Latch-Up Performance Exceeds 150mA per EIA/JESD 78, Class II
  - May be used with only a 3.3V supply
- Advanced Features
  - Able to use a low cost 25Mhz crystal for the lowest eBOM
- Packaging
  - 24-pin QFN (4x4 mm) Lead-Free RoHS Compliant package with RMII
- Environmental
  - Extended Commercial Temperature Range (0°C to +85°C)
  - Industrial Temperature Range (-40°C to +85°C) version available (LAN8720i)

ORDER NUMBER(S):

LAN8720-CP-TR FOR 24-PIN, QFN LEAD-FREE ROHS COMPLIANT PACKAGE (0 TO +85°C TEMP)

LAN8720i-CP-TR FOR 24-PIN, QFN LEAD-FREE ROHS COMPLIANT PACKAGE (-40 TO +85°C TEMP)

Reel Size is 4000

80 ARKAY DRIVE, HAUPPAUGE, NY 11788 (631) 435-6000, FAX (631) 273-3123

General Description

The LAN8720/LAN8720i is a low-power 10BASE-T/100BASE-TX physical layer (PHY) transceiver that transmits and receives on unshielded twisted-pair cable. A typical system application is shown in Figure 1, "LAN8720/LAN8720i System Block Diagram". It is available in both extended commercial and industrial temperature operating versions.

The LAN8720/LAN8720i interfaces to the MAC layer using a variable voltage digital interface via the RMII interface. The digital interface pins are tolerant to 3.6V.

The LAN8720/LAN8720i implements auto-negotiation to automatically determine the best possible speed and duplex mode of operation. HP Auto-MDIX support allows using a direct connect LAN cable, or a cross-over path cable.

The LAN8720 referenced throughout this document applies to both the extended commercial temperature and industrial temperature components. The LAN8720i refers to only the industrial temperature component.

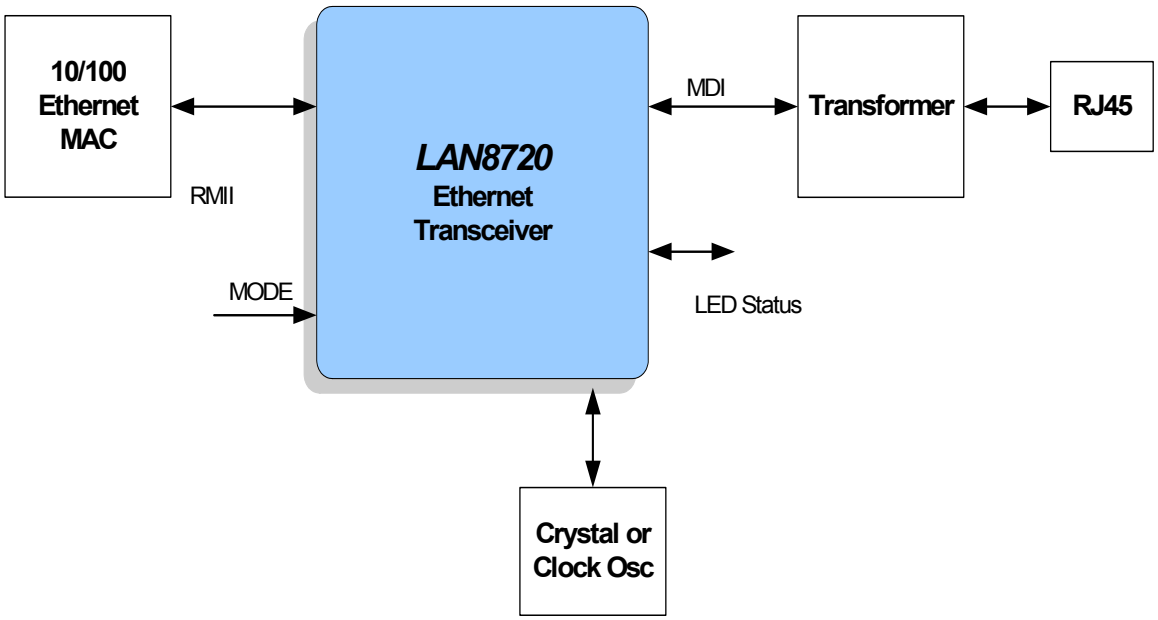

Figure 1.1 LAN8720/LAN8720i System Block Diagram

Package Outline

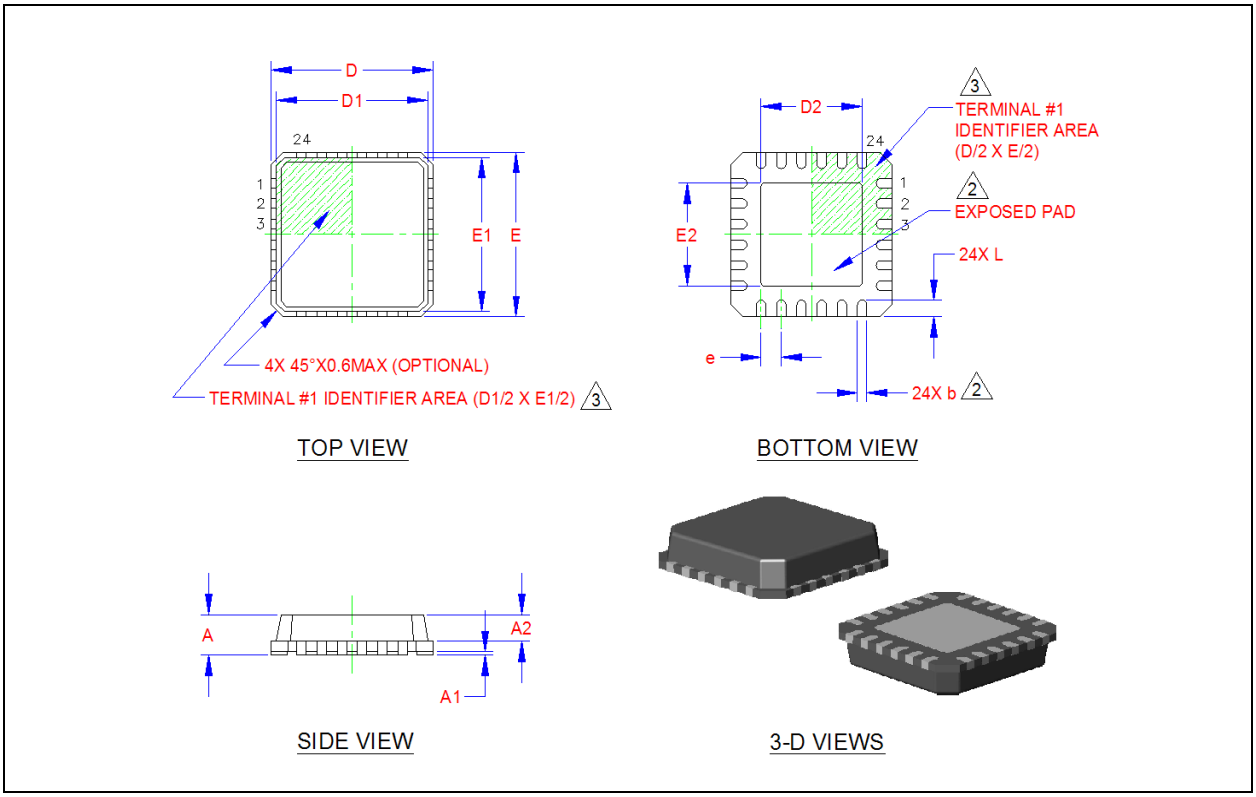

Figure 2 LAN8720/LAN8720i-EZK 24-QFN Package Outline, 4 x 4 x 0.9 mm Body (Lead-Free)

Table 2 24 Terminal QFN Package Parameters

	MIN	NOMINAL	MAX	REMARKS
A	0.70	~	1.00	Overall Package Height
A1	0	0.02	0.05	Standoff
A2	~	~	0.90	Mold Thickness
D	3.85	4.0	4.15	X Overall Size
D1	3.55	~	3.95	X Mold Cap Size
D2	2.40	2.50	2.60	X exposed Pad Size
E	3.85	4.0	4.15	Y Overall Size
E1	3.55	~	3.95	Y Mold Cap Size
E2	2.40	2.50	2.60	Y exposed Pad Size
L	0.30	~	0.50	Terminal Length
e		0.50 BSC		Terminal Pitch
b	0.18	0.25	0.30	Terminal Width
ccc	~	~	0.08	Coplanarity

1. Controlling Unit: millimeter.
2. Dimension b applies to plated terminals and is measured between 0.15mm and 0.30mm from the terminal tip. Tolerance on the true position of the leads is ± 0.05 mm at maximum material conditions (MMC).
3. Details of terminal #1 identifier are optional but must be located within the zone indicated.
4. Coplanarity zone applies to exposed pad and terminals.