

NetPHY-4LP-KT/12PT



12-Port Demonstration Kit for the Am79C875

DISTINCTIVE CHARACTERISTICS

- Evaluation board is configured for layout demonstration
- Compact step-and-repeat design ideal for multi-port applications
- Quad magnetics modules with 12-port RJ-45 dual-stack connector
- Single VDD plane, single VSS plane, with appropriate decoupling capacitors

GENERAL DESCRIPTION

The NetPHY™-4LP Demonstration Kit provides an easy-to-use tool for demonstrating the ease of design and layout using the NetPHY-4LP Low Power Quad 10/100 Ethernet Transceiver. This non-functional board will show how easy it is for system designers to create a four-port layout and to step-and-repeat the layout for any number of ports (in multiples of 4). 24-, 36-, and 48-port switch systems can easily be created without the need for individual routing and layout, as traditionally required.

The NetPHY-4LP demonstration board shows an actual layout for a 12-port system. The small size of each NetPHY-4LP device results in significant board space savings against other quad PHY devices, even against hex and octal PHYs. Because the NetPHY-4LP is optimized for RMII switch applications, the package size is drastically reduced to a 100-pin standard PQFP package. RMII reduces the number of pins required at the PHY/ASIC interface to 7 pins per port. This is a savings of 9 pins per port from the legacy MII interface. Less pins also means lower pin and package costs for ASICs.

The NetPHY-4LP device is pin-placement optimized for switch applications. The RMII pins are located on the side that interfaces to the ASIC, requiring very short

traces and minimizing outside interference that can affect high-speed signals. Also, LED and configuration pins are placed on the sides of the NetPHY-4LP package, away from the high-speed data and control pins, which they would affect otherwise. Furthermore, all the transmit and receive differential pairs are located on the magnetics side, and traces are very short and direct to minimize signal attenuation.

To demonstrate compact layout and placement, the NetPHY-4LP demonstration board provides the layout from the PHY to the dual-stack RJ-45 connector, which is the setup that more closely resembles what is used in today's system boxes. It is imperative that the layout be clean and concise, since any kind of interference significantly affects signal conditions. Therefore, the layout provided in the demonstration kit is the most optimal in terms of noise and connectivity.

KIT CONTENTS

- NetPHY-4LP Demonstration board
- Schematics
- Bill of Materials
- Board artwork for all layers
- NetPHY-4LP device data sheet (PID 22236B)

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