



CYPRESS

ADVANCED INFORMATION

CY7B972

100BASE-TX/10BASE-T Fast Ethernet Transceiver

Features

- Complies with IEEE 802.3u standard
- Four Operating Modes:
 - 100BASE-TX
 - 100BASE-TX Full Duplex
 - 10BASE-T
 - 10BASE-T Full Duplex
- Media Independent Interface (MII)
 - Three-state receive port
 - Serial management port
- Auto-Negotiation
- MLT-3 Transmitter/Receiver for 100BASE-TX
- Cat. 5 twisted-pair adaptive equalizer for 100BASE-TX
- PMA interface for repeater applications
- LED status indicators: TX, RX, Link

- Loopback mode for PHY integrity testing
- 80-pin PQFP

Functional Description

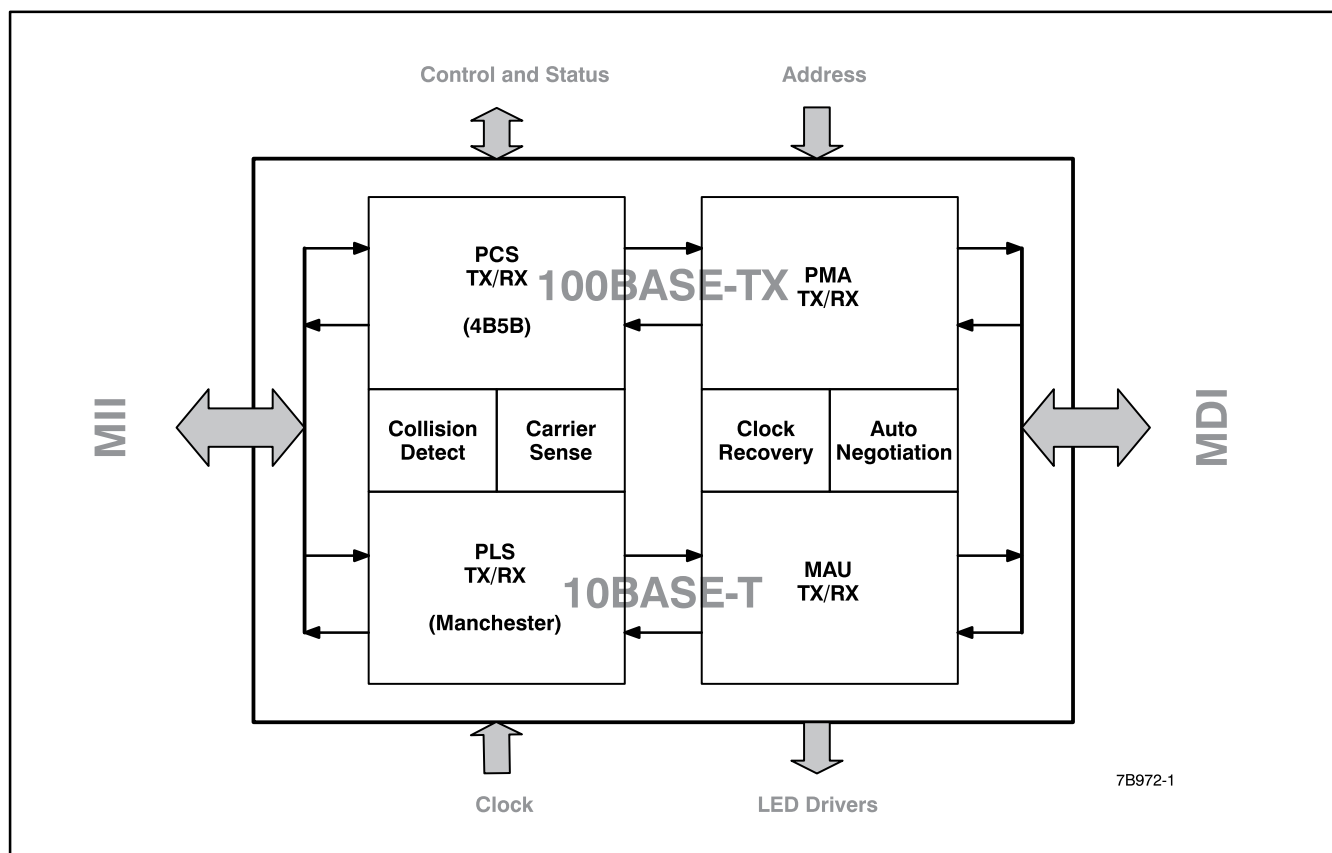
The CY7B972 is a full featured physical layer transceiver (PHY) device supporting both 100BASE-TX (Fast Ethernet) and 10BASE-T Local Area Network (LAN) standards. The CY7B972 complies with IEEE 802.3 100BASE-TX, 10BASE-T, Auto-Negotiation and MII standards.

The CY7B972 interfaces to two pair of category 5 unshielded twisted-pair cable or fiber. The Media Independent Interface (MII) attaches directly to 802.3 Media Access Control (MAC) layer devices.

The CY7B972 performs the Physical Coding Sublayer (PCS), Physical Media Attachment (PMA), Physical Layer Signal-

ling (PLS), and Media Attachment Unit (MAU) functions defined in the 802.3 standard for 100BASE-X and 10BASE-T. Ethernet frames are transferred from the MAC to the CY7B972 over the MII interface. The data is encoded in the PCS or PLS encoder (4B5B for 100BASE-TX or Manchester for 10BASE-T) and then passed to the PMA or MAU where the serial encoded data is shifted bitwise on to the twisted pair media. Collision and Carrier Detect signals are generated by the CY7B972 and passed to the MAC over the MII.

The CY7B972 PHY uses 802.3 standard Auto-Negotiation to configure the twisted-pair link. The CY7B972 also includes a direct interface to the PMA layer for repeater applications.



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