

78Q2120C

Low power 10/100 PHY for consumer and enterprise-class embedded applications.



The 78Q2120C is a 10BASE-T/100BASE-TX Fast Ethernet transceiver. It includes integrated MII, ENDECs, scrambler/descrambler, dual-speed clock recovery, and full-featured auto-negotiation functions.

The transmitter includes an on-chip pulse-shaper and a low-power line driver. The receiver has an adaptive equalizer and a baseline restoration circuit required for accurate clock and data recovery. The transceiver interfaces to Category-5 unshielded twisted pair (Cat-5 UTP) cabling for 100BASE-TX/10BASE-T and Category-3 unshielded twisted pair for 10BASE-T, and is connected to the line media via 1:1 isolation transformers. No external filter is required.

Interface to the MAC is accomplished through an IEEE-802.3 compliant Media Independent Interface (MII). The product is fabricated in an advanced CMOS process for high performance and low power operation. It's capable of operating in three power saving modes: Chip Power-Down, Receive Power Management, and Transmit High Impedance Mode.

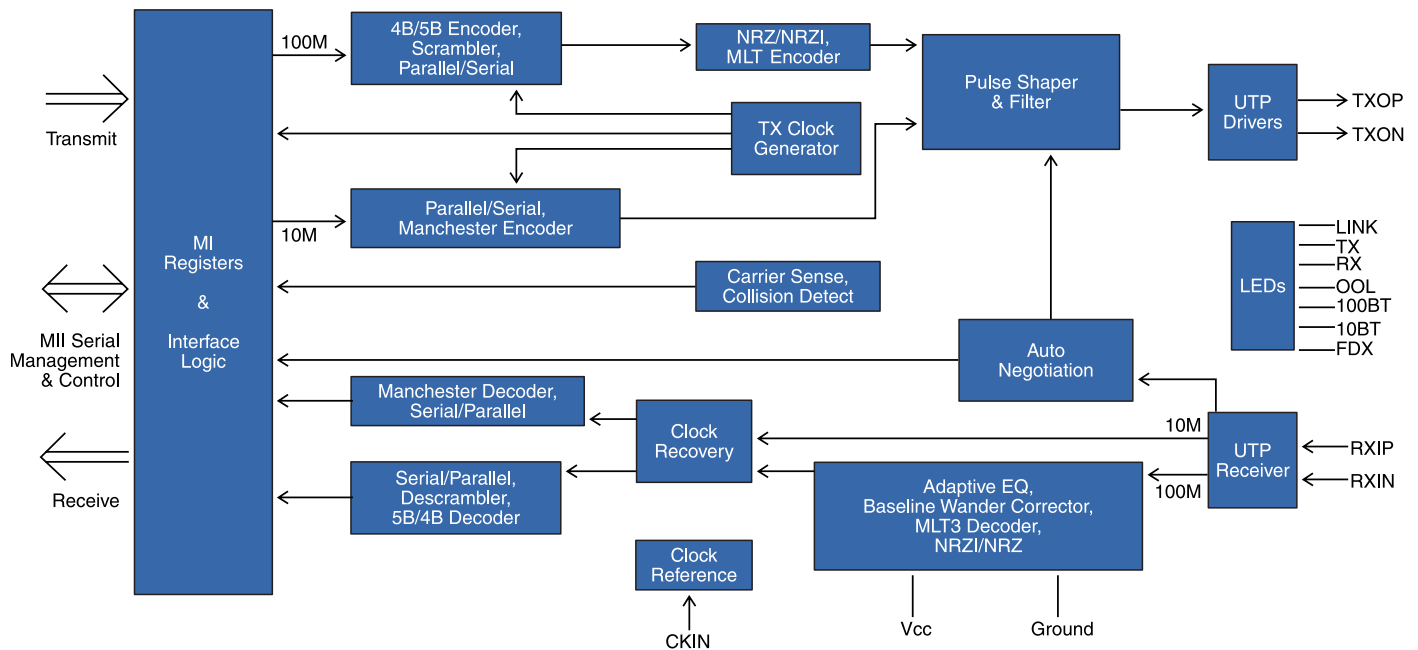
Features

- 10BASE-T/100BASE-TX operation w/1:1 XFMR
- 802.3 compliant
- Integrated MII
- Auto-negotiation
- Low power operation (<290mW typical)
- Programmable through MDIO
- 3.3 volt supply
- 64-pin LQFP

Applications

- PCI and LOM
- CardBus, Mini PCI and LON
- Set-top Boxes
- Game Consoles
- Home Gateways/
Broadband Modems
- WLAN Access Points
- Print/Servers
- VoIP
- LO AV

78Q2120C Block Diagram



78Q2120C Features

- 10BASE-T/100BASE-TX IEEE-802.3 compliant TX and RX functions requiring a dual 1:1 isolation transformer interface to the line
- Integrated MII, 10BASE-T/100BASE-TX ENDEC, 100BASE-TX scrambler/descrambler, and full-featured auto-negotiation function
- Full duplex operation capable
- PCS bypass supports 5-bit symbol interface
- Register-programmable transmit amplitude
- Dual speed digital clock recovery
- Automatic polarity correction during auto-negotiation and 10BASE-T signal reception
- Low power operation (<290mW typical)
- Power-saving and power-down modes including transmitter disable
- LED indicators: LINK, TX, RX, COL, 100, 10, FDX
- User programmable Interrupt pin
- 64-Pin LQFP package
- Single 3.3 V \pm 0.3V supply

78Q2120C Support

- Complete IBIS models
- Schematic and layout reference design
- Application engineering support
- MII and ACR demoboards available
- For technical support, send an email to: lan.support@tdksemiconductor.com

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