![National Semiconductor logo] **National Semiconductor**

DP83901 Serial Network Interface Controller

General Description

The DP83901 Serial Network Interface Controller (SNIC) is a microCMOS VLSI device designed to ease interfacing with CSMA/CD type local area networks including Ethernet (10Base5), Thin Ethernet (10Base2), and Twisted Pair (10BaseT). The SNIC implements all Media Access Control layer functions for transmission and reception of packets in accordance with the IEEE802.3 standard. Unique dual DMA channels and an internal FIFO provide a simple yet efficient packet management design. To minimize system parts count and cost, all bus arbitration and memory support logic are integrated into the SNIC.

Also integrated into the SNIC is the Serial Network Interface. This provides the Manchester data encoding and decoding functions required by 802.3. The SNIC will interface directly to the Attachment Unit Interface (AUI). When transmitting, the SNIC produces differential data for the AUI. Conversely, when receiving, a phase-locked loop decodes the 10 Mbit/sec data.

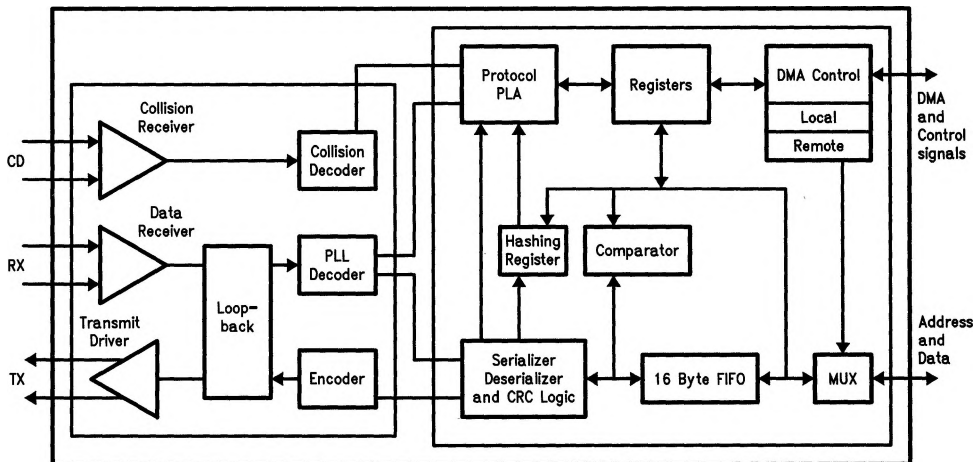An external transceiver may be connected directly to the SNIC's AUI interface. Transceivers for 10Base2 and 10BaseT are available from National Semiconductor. Alternatively, the SNIC may be connected directly to an AUI drop cable for 10Base5.

The SNIC is equivalent to the combination of the DP8390 and the DP83910 that are available from National Semiconductor.

Features

- Implements simple, versatile buffer management
- Combination of DP8390 Network Interface Controller and DP83910 Serial Network Interface
- Compatible with 802.3 Ethernet 10Base5, 10Base2, and 10BaseT
- Interfaces with 8-, 16-, and 32-bit μP systems
- Connects directly to AUI interface
- Single 5V supply
- Utilizes low power microCMOS process
- 68-pin PLCC

Block Diagram

TL/F/10469-1