KENDIN COMMUNICATIONS
Gigabit and Beyond

KS8995 – 5 Port 10/100 Switch with PHY

Introduction

The KS8995 contains five 10/100 physical layer transceivers, five MAC (Media Access Control) units with an integrated layer 2 switch. The device runs in two modes. The first mode is a five port integrated switch and the second is as a five port switch with the fifth port decoupled from the physical port. In this mode access to the fifth MAC is provided using a MII (Media Independent Interface).

Useful configurations include a stand alone five port switch as well as a four port switch with a routing element connected to the extra MII port. The additional port is also useful for public network interfacing.

The KS8995 is designed to reside in an unmanaged design not requiring processor intervention. This is achieved through I/O strapping at system reset time
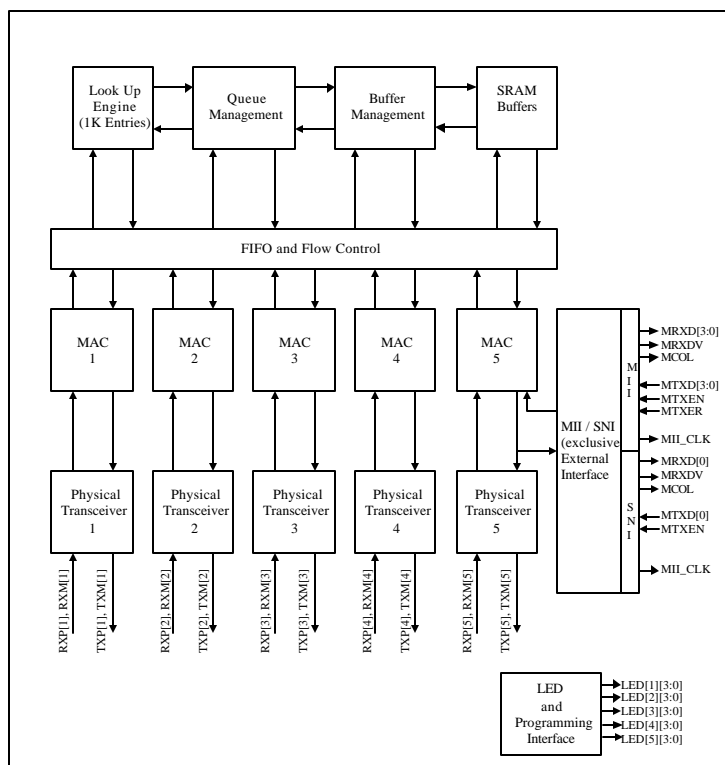
On the media side, the KS8995 supports 10BaseT, 100BaseTX and 100BaseFX as specified by the IEEE 802.3 committee.

Physical signal transmission and reception are enhanced through use of analog circuitry that makes the design more efficient and allows for lower power consumption and smaller chip die size.
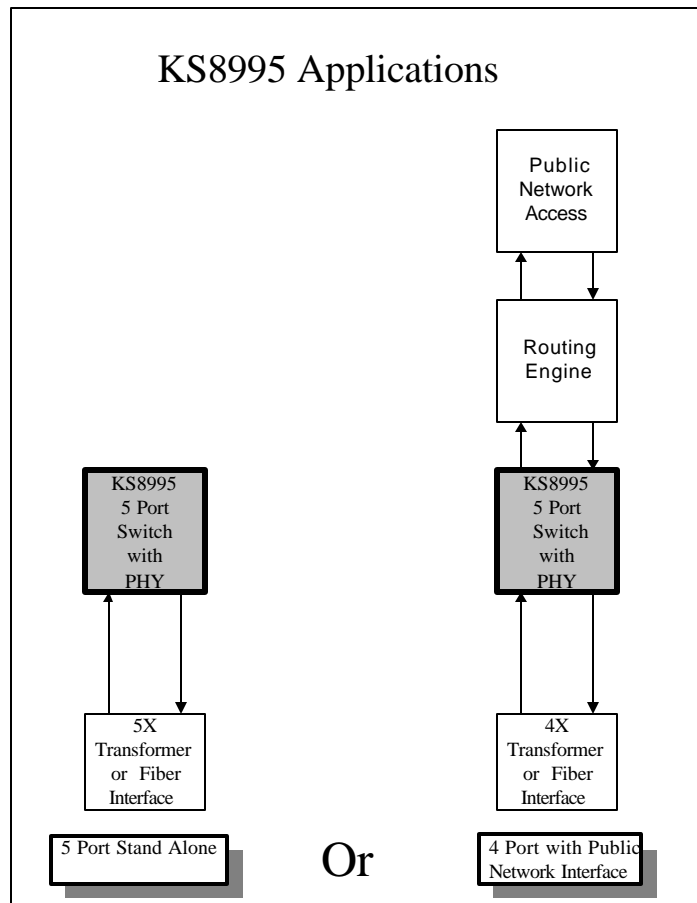
Highlights

- 5 port 10/100 Integrated Switch with Physical Layer Transceivers
- SRAM on chip for frame buffering
- 1.4Gbps high performance memory bandwidth
- 10BaseT, 100BaseTX and 100BaseFX modes of operation
- Superior analog technology for reduced power and die size
- Single 2.5 V power supply
- 500 mA (1.25 W) including physical transmit drivers
- 128 pin PQFP package
- Support for UTP or fiber installations
- Indicators for link, activity, full / half duplex and speed

- Unmanaged operation via strapping at system reset time
- Hardware based 10/100, full/half, flow control and auto negotiation
- Individual port forced modes (full duplex, 100BaseTX) when auto negotiation is disabled
- Wire speed reception and transmission
- Integrated address Look-Up Engine, supports 1K absolute MAC addresses
- Automatic address learning, address aging and address migration
- Broadcast storm protection
- Full duplex IEEE 802.3x flow control
- Half duplex back pressure flow control
- Comprehensive LED support
- External MAC interface (MII or SNI) for router applications

System Level Applications

The KS8995 can be configured to fit either in a five port 10/100 application or as a four port 10/100 network interface with an extra MII port. This MII port can be connected to an external processor and used for routing purposes or public network access. The major benefits of using the KS8995 are the lower power consumption, unmanaged operation, flexible configuration and built in frame buffering. Two such applications are depicted below.

KS8995 Applications

Public Network Access

Routing Engine

KS8995 5 Port Switch with PHY

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5X Transformer or Fiber Interface

4X Transformer or Fiber Interface

5 Port Stand Alone

Or

4 Port with Public Network Interface

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