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Integrated 3-Port 10/100 Managed Switch with PHY

Description

The KS8993M family is a highly integrated Layer 2 managed switch designed for low-port count, cost-sensitive 10/100 Mbps switch systems. It offers an extensive feature set that includes tag/port-based VLAN, QoS priority, switch management, MIB counters, MII/SMI interface, and CPU control/data interfaces to effectively address both current and emerging Fast Ethernet applications.

The KS8993M contains two 10/100 transceivers with patented mixed-signal low-power technology, three media access control (MAC) units, a high-speed non-blocking switch fabric, a dedicated address look-up engine, and an on-chip frame buffer memory.

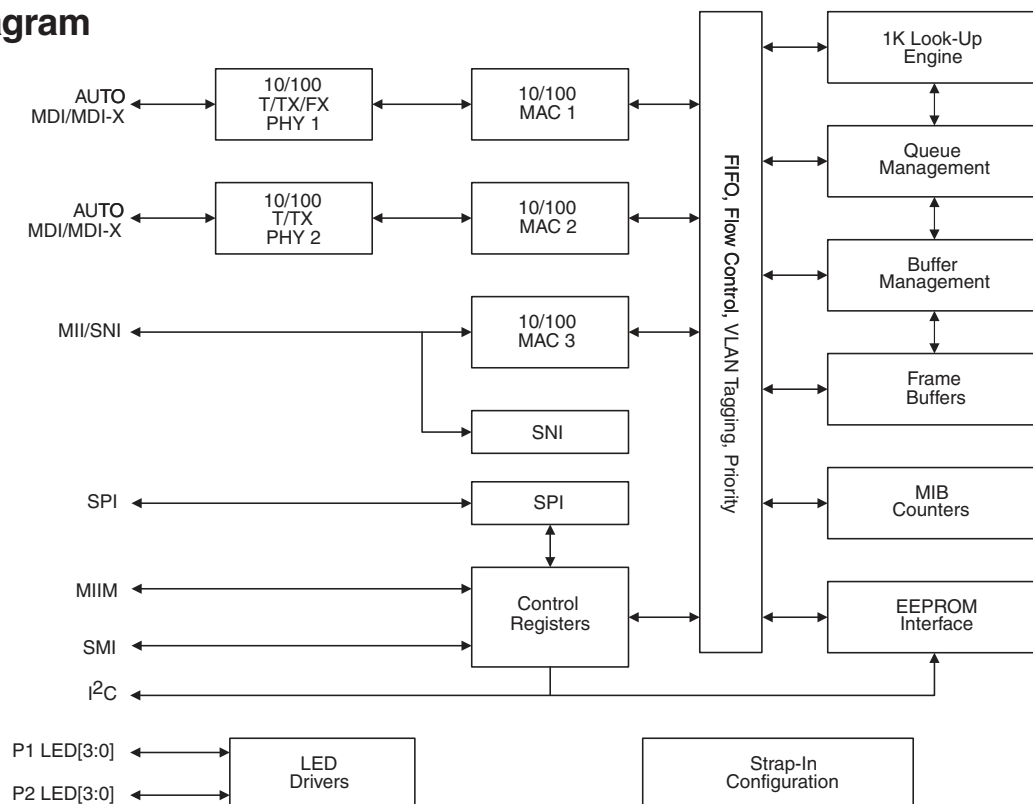
Both PHY ports support 10BASE-T and 100BASE-TX with Auto-MDIX for reliable detection of and correction for straight-through and crossover cables. In addition, one PHY port supports 100BASE-FX for managed media converter applications.

QoS prioritization, both tag and port-based, makes the KS8993M family ideal for latency critical applications such as Voice over Internet Protocol (VoIP) phones and industrial Ethernet applications.

The KS8993M is available in a wide variety of power supply, packaging, and temperature options to fit the demanding needs of today's applications. Commercial temperature range: 0°C to +70°C; Industrial temperature range: -40°C to +85°C.

For additional information, contact your local Micrel Field Application Engineer or salesperson.

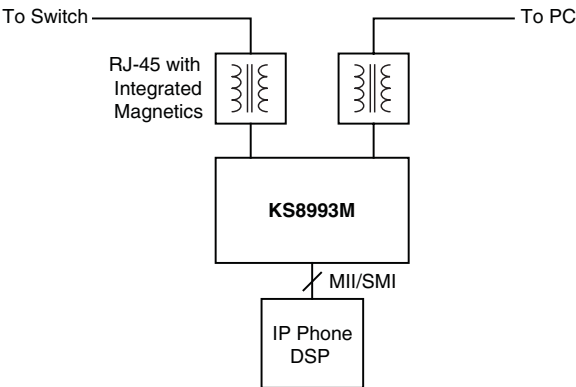
Block Diagram



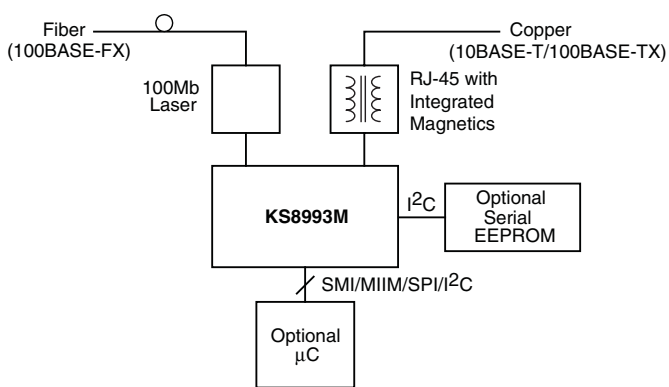
Features	Benefits
<ul style="list-style-type: none"> • QoS packet prioritization support <ul style="list-style-type: none"> – Per port, 802.1p, and DiffServ-based – Re-mapping of IEEE 802.1p priority field per port basis 	<ul style="list-style-type: none"> • Enables latency critical applications to transport network traffic with minimal interruption. Per port re-mapping enforces priority policies by overriding embedded levels.
<ul style="list-style-type: none"> • IEEE 802.1q VLAN support for up to 16 groups <ul style="list-style-type: none"> – Tag/untag on per port basis 	<ul style="list-style-type: none"> • Secures and segregates network traffic <ul style="list-style-type: none"> – Supports a full range of VLAN IDs (4096)
<ul style="list-style-type: none"> • Advanced switch features <ul style="list-style-type: none"> – IEEE 802.1d Spanning Tree Protocol support – Programmable rate limiting from 0Mbps to 100Mbps – Broadcast storm protection with % control 	<ul style="list-style-type: none"> • Allows redundancy and shape/protect traffic <ul style="list-style-type: none"> – Resolves loops and permits redundancy – Allocates bandwidth with 32kbps granularity – Guards against denial of service (DoS) attacks
<ul style="list-style-type: none"> • Switch management <ul style="list-style-type: none"> – Port mirroring/sniffing: 34 MIB counters per port. 	<ul style="list-style-type: none"> • Delivers comprehensive remote management capability <ul style="list-style-type: none"> – Enables complete view of network activity
<ul style="list-style-type: none"> • Multiple register access options <ul style="list-style-type: none"> – SMI, SPI, and I²C interface to all registers – MII management (MIIM) access to PHY registers 	<ul style="list-style-type: none"> • Interfaces with a wide variety of devices <ul style="list-style-type: none"> – Connects to EEPROM/CPU for un/managed operations – On the fly configuration of switch/PHY parameters
<ul style="list-style-type: none"> • Optimized power modes, packaging, and power supplies <ul style="list-style-type: none"> – Full-chip hardware power-down, port-based software power save mode. – Lead-free and standard packages available – 1.8V and 2.5V/3.3V or 3.3V only option – Industrial and commercial temperature options. – Available in 128-pin PQFP 	<ul style="list-style-type: none"> • Provides packages/power options for each environment <ul style="list-style-type: none"> – Delivers an average power consumption of <800mW Ideal for low-power applications – increased reliability. – Available in environmentally friendly packages – Supplied in power options to suit system rails – Operates in harsh environments – Suitable for space-constrained applications

Applications

Media Converter Integrated DSL/Cable Modem Set-Top/Game Box
 VoIP Phone SOHO Residential Gateway Industrial Ethernet Applications



Voice over IP Application



Media Converter Application

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