KSZ8893FQL

Integrated 3-Port 10/100 Managed Switch-PHY

Description

The KSZ8893FQL, a highly integrated single-chip 3 port Fast Ethernet switch is designed for applications with fiber support such as media converter. It provides 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 Layer-2 managed switch and TS-1000 OAM (Operations, Administration and Management) V2 in a compact solution. Backwards compatible to the TS-1000 (2002) specification, TS-1000 V2 is an OAM sub-layer that provides communication between CO (central office) and CPE (customer premises equipment).

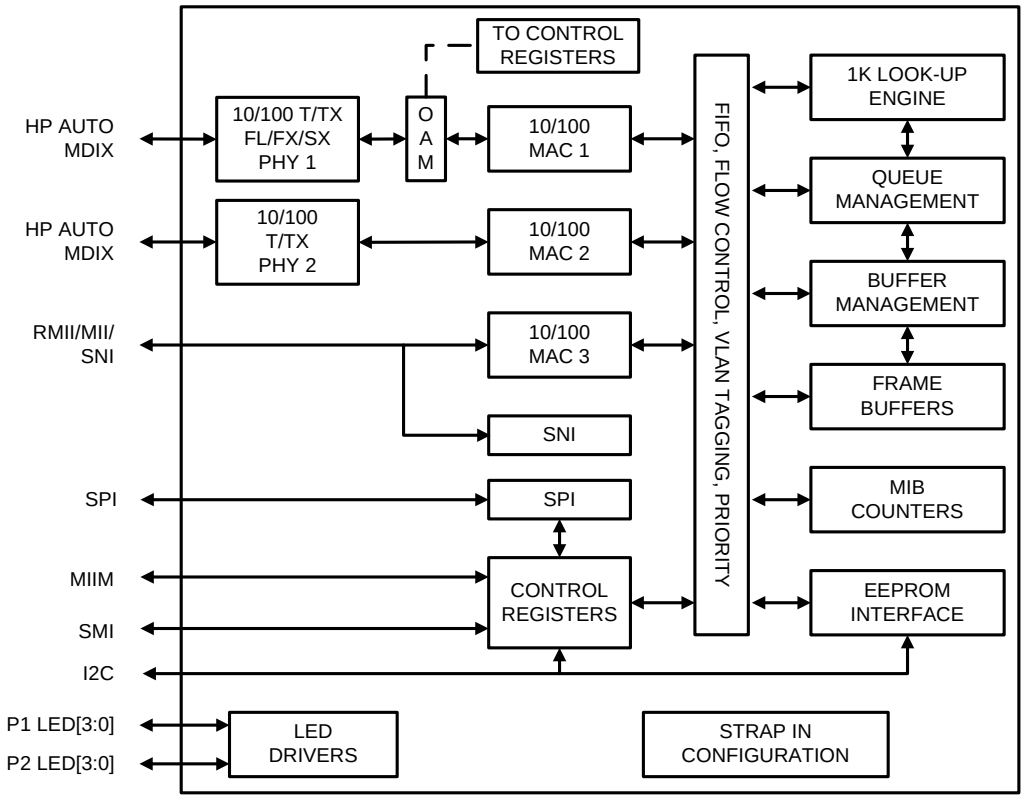
In fiber mode, port 1 can be configurable to either 100BASE-FX, 100BASE-SX, or 10BASE-FL fiber for conversion to 10BASE-T and 100BASE-TX copper. LED driver and post amplifier are also included for 10BASE-FL and 100BASESX applications using short wavelength modules.

In copper mode, both PHY units support 10BASE-T and 100BASE-TX with HP Auto MDI/MDI-X for reliable detection of and correction for straight-through and crossover cables, and LinkMD™ TDR-based cable diagnostics for identification of faulty cabling.

The high performance switching engine features an extensive feature set that includes programmable rate limiting, tag/port-based VLAN, 4 priority class, RMII/MII/SNI and CPU control/data interfaces to effectively address both current and emerging Fast Ethernet applications.

The KSZ8893FQL comes in a lead-free package.

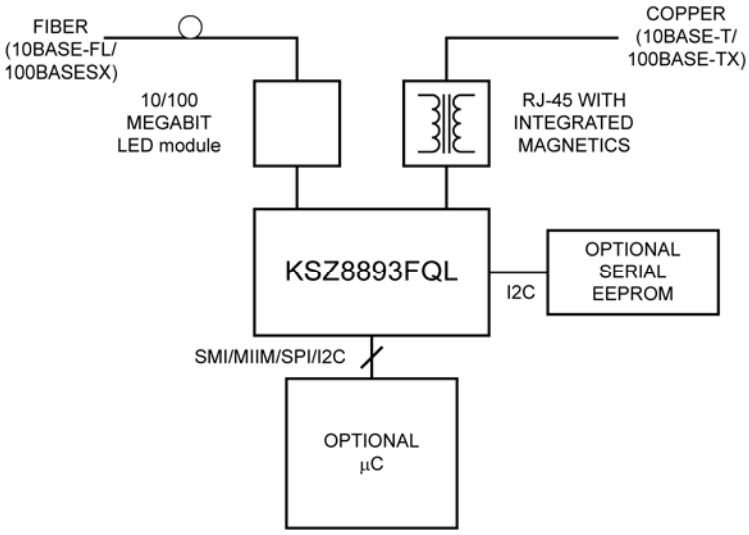
Block Diagram



Features	Benefits
• Integrated LED driver and post amplifier	• Enable usage of low cost “sugar cube” optical module
• Advanced PHY technology with LinkMD	• TDR based cable diagnostic for simplified IT services
• Packet prioritization support Per-port, 802.1p and DiffServ based Re-mapping of 802.1p priority field per-port basis Four priority levels	• Enables latency critical applications to transport network traffic with minimal interruption. Per-port re-mapping enforces priority policies by overriding packet embedded priority levels. Triple play (voice, video, data) application ready
• 802.1q VLAN support for up to 16 groups. Tag/untag on per-port basis	• Secures and segregates network traffic. Full range of VLAN IDs supported.
• Advanced switch features Programmable priority based ingress and egress rate limiting Broadcast storm protection with % control 802.1d Spanning Tree Protocol support	• Shape/protect traffic and enable redundancy Allows creation of bandwidth-based tiered services, optimizes bandwidth based on applications Guard against denial of service attacks Resolve loops, permit redundancy
• Switch management Port mirroring/monitoring/sniffing: ingress and/or egress traffic to any port or MII, 34 MIB counters per port IGMP snooping (IPv4) and MLD snooping (IPv6)	• Comprehensive remote management capability enables complete view of network activity.
• Multiple register access options SMI, SPI and I2C interface to all registers MII Management (MIIM) access to PHY registers	• Ability to interface with wide variety of devices Connectivity to CPU/EEPROM for un/managed operation. On the fly configuration of switch/PHY operating parameters
• Optimized power modes, package choices Full-chip hardware power-down, port-based software power save mode Lead-free packages Single 3.3V Supply Compact 128-pin PQFP	• Choose best package/power option for each environment Avg. power consumption of < 800 mW. Ideal for low-power applications, increased reliability Environmentally friendly Simplified Power supply requirements Suitable for space constrained applications

Applications

- Applications
- Media Converter
- SOHO Residential Gateway



Media Converter Application

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