

## About Micrel

Micrel, Inc. is a leading global manufacturer of mixed signal analog, power, LAN, and clock management semiconductor.

Micrel's customers consist of the world's leading OEMs serving automotive, consumer, enterprise, industrial, mobile, and telecommunications markets.

Micrel Inc.'s corporate headquarters is located in San Jose, CA, with a global presence in Asia, the Americas, and Europe.

[www.micrel.com](http://www.micrel.com)



Micrel's innovative EtherSynch™ technology combines Ethernet communications, IEEE 1588v2 distributed synchronization, and precision GPIO in a highly-integrated, energy-efficient solution. A hardware-based architecture provides extensive synchronization and communications processing, freeing the limited host CPU resources. Precision GPIO extends the system synchronization to locally-connected devices through a highly-configurable GPIO facility that reduces the per-device cost for Ethernet attachments.

[www.ethersynch.com](http://www.ethersynch.com)



## KSZ84xx EtherSynch™ IEEE 1588v2 Over Ethernet Product Family

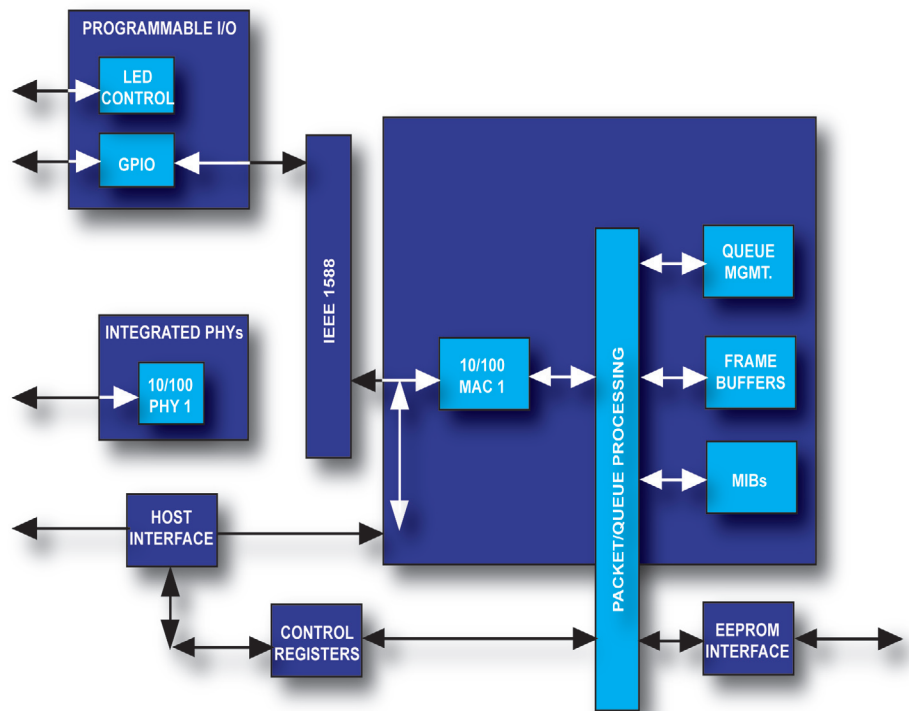
### KSZ8441HLI — EtherSynch IEEE 1588v2 10/100 Controller with Generic Host Bus Interface

The KSZ8441 controller enables end-device attachments for industrial Ethernet and electrical substation automation networks. Key applications include industrial Ethernet standards, including EtherNet/IP™, PROFINET®, Modbus TCP™, and POWERLINK, along with IEC 61850 standard for substation communications.

The KSZ8441 controller simplifies integration with Host CPUs that do not provide embedded Ethernet MACs and has been optimized to offload synchronization and communications host processing through its hardware-intensive architecture.

Micrel offers a precision timing protocol (PTPv2) synchronization stack solution integrated with the KSZ8441 driver to accelerate the design cycle. The KSZ8441 switch is also interoperable with leading third-party PTP stacks.

Micrel features the industry's most robust and cost-effective Ethernet switches and physical layer transceivers, built upon Micrel's low-power physical layer technology, advanced power management, and innovative design.



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EtherNet/IP is a trademark of ControlNet (under license by ODVA).  
PROFINET is a registered trademark of the PI organization  
Modbus TCP is a trademark of Modbus IDA.*

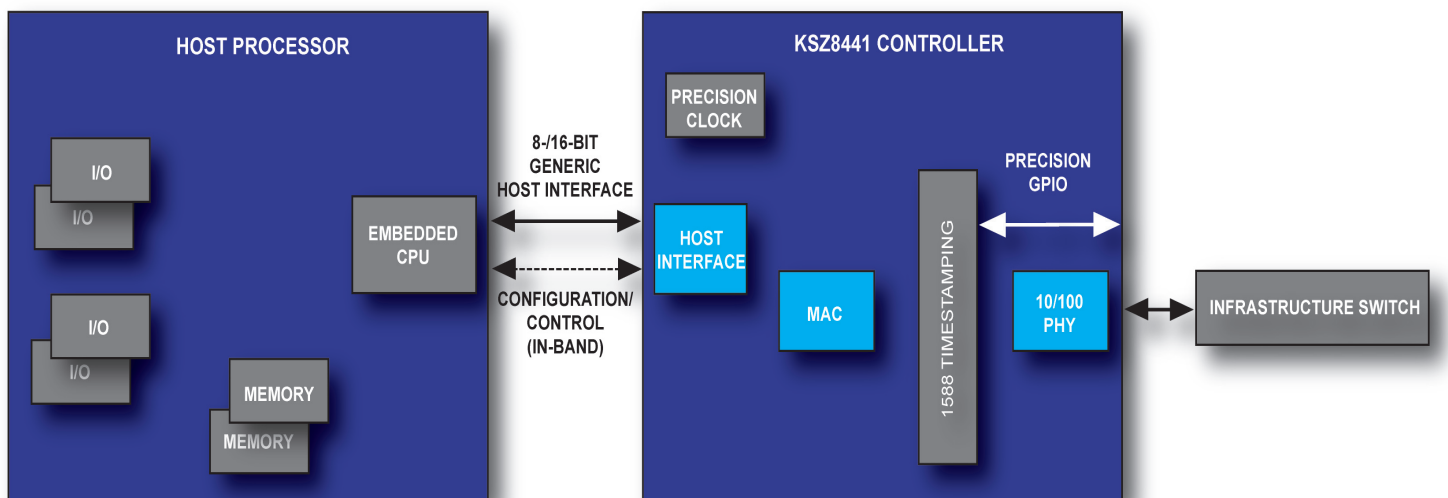
## Features

- Comprehensive PTP clock modes.
- Hardware-assisted PTP implementation.
- Extensive GPIO synchronized to precision clock.
- Configurable 8- or 16-bit Generic Host Interface.
- PTP protocol stack integrated with KSZ8441 driver.
- Compact 10mm x 10mm, 64-pin, LQFP package.
- Advanced power management.

## Benefits

- Supports Ordinary, Master, Slave, and Transparent clocks in a single device.
- Reduces Host CPU processing load and network traffic.
- Extends system synchronization to locally-connected devices.
- Supports a wide range of Host CPUs with in-band management.
- Reduces time to deployment with pre-qualified solution.
- Reduces board resources and BOM costs.
- Industry's lowest power consumption and energy efficiency.

## KSZ8441 readily integrates with host CPUs that do not provide an embedded Ethernet MAC



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