


Ethernet CTLR Single Chip 10Mbps/100Mbps 3.3V Automotive 32-Pin QFN EP Tray

Manufacturer:	Microchip Technology, Inc
Package/Case:	VQFN32
Product Type:	Communication & Networking ICs
RoHS:	RoHS Compliant/Lead free 
Lifecycle:	Active



Images are for reference only

Inquiry

General Description

The KSZ8851 is a single-port controller chip with a SPI or 8-/16-/32-bit non-PCI CPU interface. Available in 32-/48-/128-pin packages, the KSZ8851 is for applications requiring cost-effective, high-throughput Ethernet connectivity in traditional embedded systems with MCUs or MPUs.

KSZ8851SNL/SNLI: SPI interface, 32-pin package

KSZ8851-16MLL: 8-/16-bit host bus, 48-pin package

KSZ8851-16/32MQL: 16-/32-bit host bus, 48-pin package (-16MQL) or 128-pin package (-32MQL)

The KSZ8851 is a single chip, mixed analog/digital device offering Wake-on-LAN technology for effectively addressing Fast Ethernet applications. It consists of a Fast Ethernet MAC controller, an 8-bit or 16-bit generic host processor interface and incorporates a unique dynamic memory pointer with 4-byte buffer boundary and a fully utilizable 18KB for both TX (allocated 6KB) and RX (allocated 12KB) directions in host buffer interface. The KSZ8851 is designed to be compliant with the appropriate IEEE 802.3u standards. An industrial temperature-grade version of the KSZ8851 is also available. Physical signal transmission and reception are enhanced through the use of analog circuitry, making the design more efficient and allowing for lower-power consumption. The KSZ8851 is designed using a low-power CMOS process that features a single 3.3V power supply with options for 1.8V, 2.5V or 3.3V VDD I/O. The device includes an extensive feature set that offers management information base (MIB) counters and CPU control/data interfaces with single shared data bus timing. The KSZ8851 includes unique cable diagnostics feature called LinkMD®. This feature determines the length of the cabling plant and also ascertains if there is an open or short condition in the cable. Accompanying software enables the cable length and cable conditions to be conveniently displayed. In addition, the KSZ8851 supports Hewlett Packard (HP) Auto-MDIX thereby eliminating the need to differentiate between straight or crossover cables in applications. Microchip's complimentary and confidential LANCheck® online design review service is available for customers who have selected our products for their application design-in. The LANCheck online design review service is subject to Microchip's Program Terms and Conditions and requires a myMicrochip account.

Key Features

Integrated MAC and PHY Ethernet Controller compliant with IEEE 802.3/802.3u standards

Designed for high performance and high throughput applications

Supports 10BASE-T/100BASE-TX

Supports IEEE 802.3x full-duplex flow control and half-duplex back pressure collision flow control

Supports DMA-slave burst data read and write transfers

Supports IP Header (IPv4)/TCP/UDP/ICMP checksum generation and checking

Supports IPv6 TCP/UDP/ICMP checksum generation and checking

Automatic 32-bit CRC generation and checking

Simple SRAM-like host interface easily connects to most common embedded MCUs.

Supports multiple data frames for transmit and receive without address bus and byte-enable signals

Supports both Big- and Little-Endian processors

Larger internal memory with 12K Bytes for RX FIFO and 6K Bytes for TX FIFO. Programmable low, high and overrun watermark for flow control in RX FIFO

Shared data bus for Data, Address and Byte Enable

Efficient architecture design with configurable host interrupt schemes to minimize host CPU overhead and utilization

Powerful and flexible address filtering scheme

Optional to use external serial EEPROM configuration for MAC address

Single 25MHz reference clock for both PHY and MAC

HBM ESD Rating 6kV

Power Modes, Power Supplies, and Packaging

Single 3.3V power supply with options for 1.8V, 2.5V and 3.3V VDD I/O

Built-in integrated 3.3V or 2.5V to 1.8V low noise regulator (LDO) for core and analog blocks

Enhanced power management feature with energy detect mode and soft power-down mode to ensure low-power dissipation during device idle periods
Comprehensive LED indicator support for link, activity and 10/100 speed (2 LEDs) - User programmable

Low-power CMOS design

Commercial Temperature Range: 0°C to +70°C

Industrial Temperature Range: -40°C to +85°C

Flexible package options available in 32-pin (5mm x 5mm) QFN KSZ8851SNL/SNLI, 48-pin (7mm x 7mm) LQFP KSZ8851-16MLL or 128-pin PQFP KSZ8851-16/32MQL



Recommended For You

KSZ8851-16MQL

Microchip Technology, Inc
PQFP-128

KSZ8851-16MLL

Microchip Technology, Inc
LQFP48

KSZ8893MQL

Microchip Technology, Inc
QFP128

KSZ8893MQLI

Microchip Technology, Inc
QFP128

KSZ8863RLLI

Microchip Technology, Inc
LQFP-48

KSZ8895FQXI

Microchip Technology, Inc
PQFP128

KSZ8895RQXI

Microchip Technology, Inc
PQFP128

KSZ8895MQXIA

Microchip Technology, Inc
PQFP-128

KSZ8895FQXI-TR

Microchip Technology, Inc
PQFP-128

KSZ8851SNLI-TR

Microchip Technology, Inc
QFN32

KSZ8842-PMQL

Microchip Technology, Inc
PQFP-128

KSZ8863MLL

Microchip Technology, Inc
LQFP48

KSZ8993M

Microchip Technology, Inc
QFP128

KSZ8993MI

Microchip Technology, Inc
QFP128

KSZ8851SNL-TR

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QFN32