MICREL ®

Integrated Voice/Fax ATA on a Chip

Description

The KSZ8342 Voice/Fax ATA on a Chip is a highly integrated SOC designed to enable a new generation of low-cost and **Green** Analog Telephone Adapters (ATA).

By embedding a MIPS32 RISC CPU and a ZSP DSP, the KSZ8342 supports standard CODECs, voice optimization and value-add Voice and Fax capabilities in the industry's most highly integrated ATA controller.

Optimized integration reduces overall BOM cost. The KSZ8342 supports SLIC, SDRAM, Flash interfaces for a full-featured and compact ATA.

Micrel also features a highly reliable and low-power 10/100 Ethernet Controller, complemented by our innovative advanced power management.

The KSZ8342 ATA solution is the ideal choice for low-cost ATAs, backed by Micrel's high-reliability and robustness proven in commercial, industrial, and automotive applications around the globe.
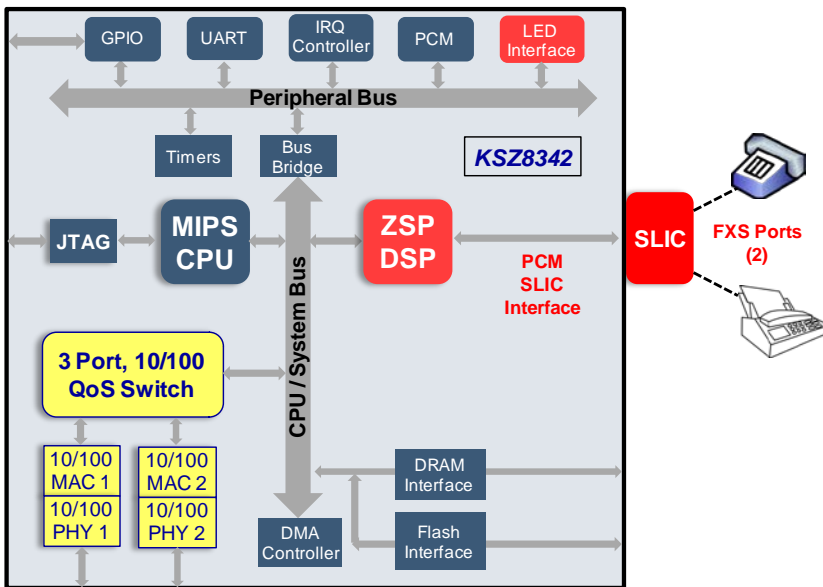
Applications

- Residential VoIP
- Small/Medium Business (SMB) enterprises

System Configurations

- ATA on a Chip with two 10/100BaseTX PHYs
- 3.3 V and 1.2 V supply voltages
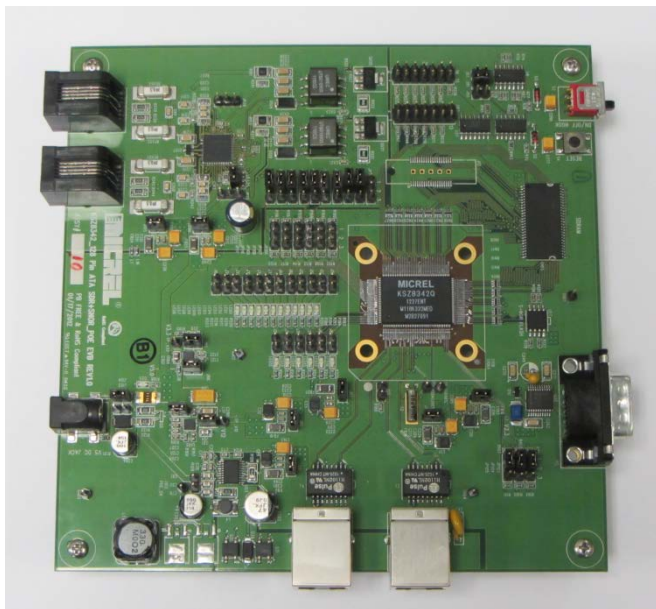

Block Diagram

KSZ8342 On-Chip Functionality:

- ATA supporting two FXS ports
  - PCM SLIC interface that can support 1 or 2 channels
  - 2 10/100 Ethernet MAC/PHY ports
- ZSP400 DSP offers high-quality voice processing and embedded VoIP stack
  - Voice and Fax support
  - Wideband and Narrowband audio CODECs
  - Standard VoIP voice quality features
- MIPS32 4Kec RISC CPU for configuration and network protocol processing
  - Embedded Linux RTOS
  - Memory controller for SDRAM and Flash interfaces
- GPIOs and LEDs supported

KSZ8342 ATA Features	Benefits
Highest-level of integration	Reduced ATA BOM cost Compact footprint Low power consumption
ZSP digital signal processor	DSP design already proven in many VoIP applications Supports communications functionality and voice quality enhancements
3-port 10/100 Base-T Ethernet Switch with integrated PHY transceivers	Low-power design with comprehensive, standard IEEE 802 LAN functionality for priority, VLANs, and QoS
MIPS32 4KEC embedded RISC processor with Embedded Linux RTOS	Standard CPU core with broad software support for host applications, IP protocol processing, and management
Advanced power management	Industry's lowest power Ethernet switch, achieving a green and low-cost design
JTAG support for embedded RISC CPU and DSP	Enables efficient debugging to reduce time to market

Fast Time to Market for ATA System Designs

Micrel VoIP KSZ8342Q ATA SOC Evaluation Board:

- Evaluation Platform for Micrel VoIP KSZ8342Q Single-Chip ATA SOC solution

- Enables OEM bring-up of complete SIP ATA solution, phone control and status functions, and user interface

- Software programmable, with two RJ-9 interfaces for voice handsets and RS-232C interface for PC control

- Shipped with complete Micrel-supplied VoIP and SIP ATA protocol software stack
    - Includes VoIP Voice CODECs and DSP-based Voice Quality Enhancement firmware
    - Wideband G.722
    - Narrowband G.711 µ-law/A-law, G.726, G.729A/B

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