Gateway Solutions

Link Street™
Integrated Gateway Router
with Multi-Port QoS Switch
88E6218

LINK STREET™

PRODUCT OVERVIEW

The Marvell® Link Street™ family of highly integrated gateway router devices provides a superior level of functionality and performance for residential gateway applications. The Link Street 88E6218 device is an advanced single-chip gateway router device integrating a high-performance CPU for wire-speed routing, an advanced switching fabric with Quality of Service (QoS) support, five integrated Fast Ethernet (FE) PHYs, one MII port, a UART for debugging and modem backup, and advanced Virtual Cable Tester™ (VCT) cable diagnostics. The 88E6218 device is an ideal solution for residential gateway applications.
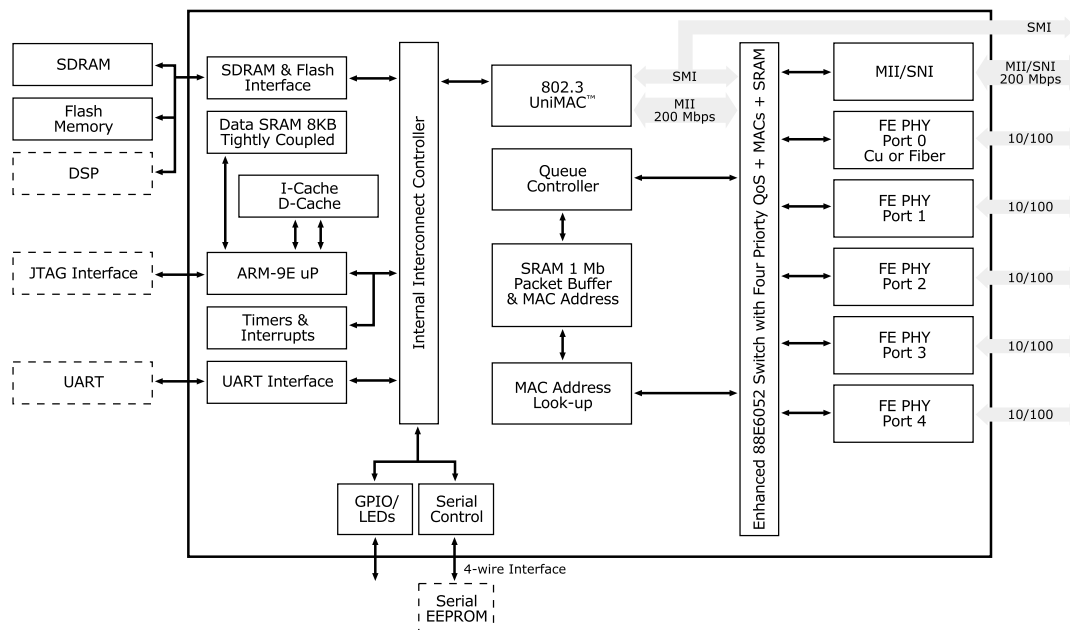

Figure 1. Link Street 88E6218 Internal Block Diagram

FEATURES

- Single-chip integration of a high-performance CPU, multi-port switch with PHYs, peripheral I/O ports and VCT technology

- ARM-9E CPU at up to 150 MHz clock frequency

- Five integrated FE PHY ports and one MII port
  - Auto-MDI/MDIX crossover for 100BASE-TX and 10BASE-T ports

  - One FE PHY port can be configured for copper (100BASE-TX or 10BASE-T) or fiber (100BASE-FX) connections
  - MII Interface supports both MAC Mode (Forward MII) or PHY Mode (Reverse MII), 7-wire SNI, or Reduced MII (RMII)

- Virtual Cable Tester (VCT) technology

BENEFITS

- Provides a low-cost and full-featured solution for Small Office/Home Office (SOHO) routers

- High-performance CPU with optimized internal caches for wire-speed routing throughput

  - Simplifies and reduces cost of networking installation and reduces costly phone calls to equipment manufacturers' support centers
  - Supports both copper and fiber connections with the integrated Marvell Alaska® digital PHY technology for market-leading network reach
  - Provides design flexibility for connections to CPUs or external PHYs

- Advanced cable integrity diagnostics helps customers determine location of cable opens, shorts and impedance mismatch
- Reduces costly phone calls to equipment manufacturers' support centers

MARVELL®

FEATURES

- UART port

- High-speed switch fabric with QoS support
  - High-performance lookup engine with support for up to 2,048 MAC address entries with automatic learning and aging
  - Four priority queues supporting IEEE 802.1p, IPv4 Type of Service (ToS) and Differentiated Service (DiffServ), and IPv6 Traffic Class priority assignments
  - Port-based VLANs supported in any combination

- CMOS low power dissipation PAVE = Less than 1.5W

BENEFITS

- UART port can be used for console management or for WAN link backup via an external modem

- Provides true non-blocking switching performance
  - Supports a large number of Ethernet nodes

  - Ideal for supporting prioritized packet streams for time critical and multimedia traffic

  - Supports port based VLAN to allow suppression or addition of VLAN group membership to provide flexible management by IT managers

- Eliminates expensive heat sinks or fans and permits the use of low-cost and small enclosures

APPLICATIONS

The Link Street family of products provides industry-leading functionality for advanced gateway routers. The Link Street 88E6218 device's higher integration allows OEM and ODMs to deliver strong SOHO networking features and performance at entry-level prices in a small footprint. The flexibility of the 88E6218 device comes from its configuration options and integration. The device integrates a high-performance CPU for wire-speed routing of network packets. Figure 2 shows the 88E6218 device in a residential gateway router application.
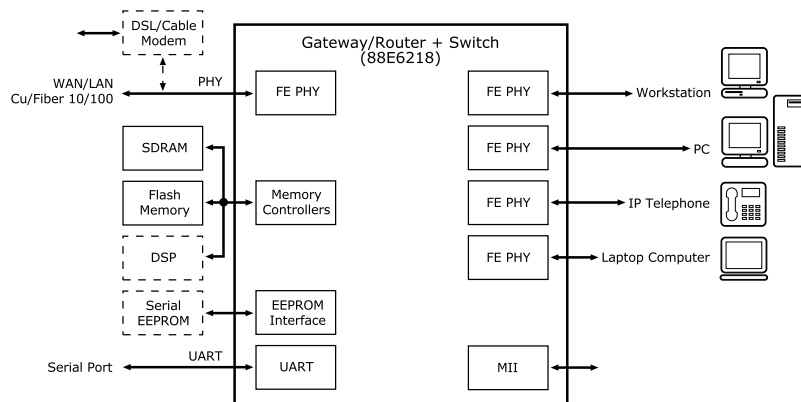
Figure 2. Link Street 88E6218 Gateway Router System Block Diagram

THE MARVELL ADVANTAGE: Marvell's worldwide field applications engineers collaborate closely with network equipment vendors to develop and deliver new competitive products to market on time. All Marvell products, including the Link Street 88E6218 integrated gateway router, are supported by a complete set of hardware and software tools to assist network hardware engineers with product evaluation.

For more information, visit our website at www.marvell.com.

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