

# ET4000 Single-Chip 28 x 1 Gbits/s Layer 2+ Ethernet Switch



## Overview

The 28-port ET4000 is part of the Agere Systems ET4K family of gigabit Ethernet switch chip sets. These cost-effective, true switch-on-chip solutions have been developed to help simplify your design and production efforts for GbE switching systems.

The Agere Systems ET4000 is a complete switch solution that provides 28 gigabit Ethernet (GbE) ports (*IEEE*<sup>®</sup> compliant 802.3z 10/100/1000 Mbits/s Ethernet MACs) in a single chip. Twenty-four of the MACs connect to external PHYs via 6-pin LVDS SGMII interfaces, four can be connected to external fiber PHYs via SerDes interfaces.

The ET4000 is offered in a 525-pin FCBGA package and is fabricated in advanced 0.13  $\mu\text{m}$  CMOS process technology. The complete solution is designed to address the power and size constraints in switching applications. A seamless interface and common API for use with the Agere ET1081 *TruePHY*<sup>™</sup> multiport PHY will help reduce costs and ensure performance.

The ET4000 is a highly integrated and fully featured Layer 2 Ethernet bridge with integrated MACs, packet buffers, and address tables. Its high levels of integration can help significantly reduce design costs, reduce power and space requirements, and increase reliability. The ET4000 offers proven TCP/IP network security features such as L2/L3/L4 ACL as well as QoS capabilities. It offers advanced service recognition and queuing to support the ability to create and manage new QoS-based services. These comprehensive QoS features and the ET4000 wire speed performance enables enterprise desktop aggregation switching applications.

A reference system design kit is available for the ET4000, for more information please contact your Agere Systems sales representative.

## Features

- Twenty-eight 10/100/1000 Mbits/s Ethernet ports (24 SGMII interfaces to GbE copper PHYs, up to four SerDes interfaces to GbE fiber ports).
- Aggregate 42 Mpackets/s switching capacity (wire speed operation).
- 32-bit, 66 MHz PCI processor interface.
- Two MDIO interfaces.
- Integrated packet buffer memory.
- Integrated address table memories.
- Full *IEEE* 802.1D bridging.
- Extensive VLAN support.

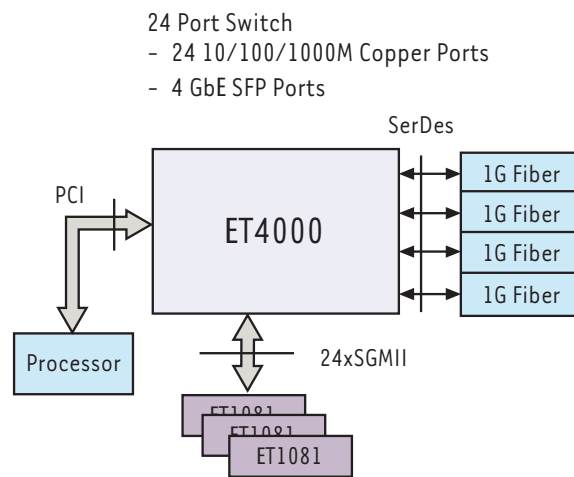
## Features (continued)

- L2/L3/L4 classification for access control list (ACL) and quality of service (QoS).
- Supporting IPv4 and IPv6
- Advanced traffic management functions.
- Link aggregation and mirroring.
- Advanced 0.13  $\mu\text{m}$  CMOS technology.
- 525-pin FCBGA package.

## Applications

The Agere Systems ET4000 chip set solutions are used to create competitive Layer 2+ gigabit Ethernet desktop switches. They can be used for a 24-port gigabit Ethernet switch in standalone configuration, or with the addition of four fiber ports in standalone configuration, or in high-density gigabit Ethernet fabric switches.

## System Diagram



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