

Features

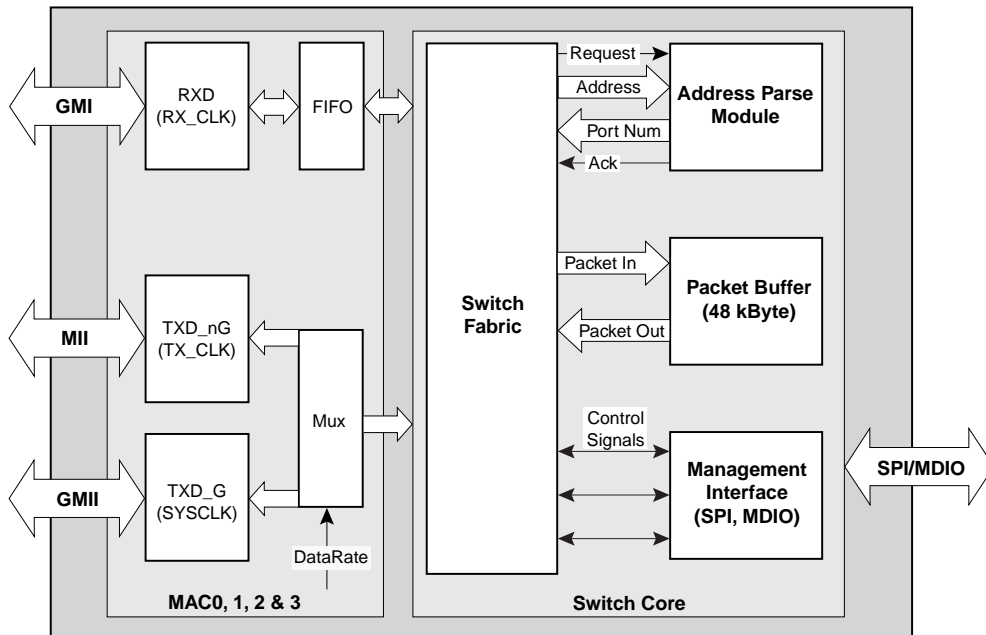
- Supports Four 10/100/1000 Mbps Ethernet Ports with GMII/MII Interface
- IEEE 802.3ab CSMA/CD Compliant
- Full and Half Duplex Mode of Operation
- Speed and Duplex Mode Auto-negotiation Through MDIO
- Self-address Learning Mechanism Supports 512-MAC Addresses
- Automatic Address Aging with 300 seconds Default
- 512-kbit Packet Buffer Memory Embedded
- Serial Port Interface Employed to Communicate with MCU
- IEEE 802.3ab Flow Control for Full Duplex Operation
- Supports Store-and-Forward Mode of Operation
- 0.18 Micron, 1.8V CMOS Technology Packaged in 160-pin PQFP
- 3.3V I/O
- Available in a Variety of Packages Depending on Customer Requirements

Description

This Layer 2 Switch provides an ideal solution for the design of unmanaged full wire-speed multi-port Gigabit Ethernet (GbE) switches. Each port supports either 10/100/1000 Mbps data rate. Flow controls, back pressure in half-duplex mode and PAUSE frame in full-duplex mode are employed to solve the HOL (Head of Line) blocking.

This Layer 2 Switch integrates four half/full duplex mode 1000 BASE Gigabit Ethernet MACs, wire speed switching engines, MAC address based address parsing algorithms and packet buffer memory.

Figure 1. Ethernet Level 2 Switch Block Diagram



4-port Layer 2 10/100/1000Mbps Unmanaged Switched Ethernet Controller

AT79C1020

Summary

3434BS-NETST-3/04



Note: This is a summary document. A complete document is available under NDA. For more information, please contact your local Atmel sales office.



Atmel Corporation

2325 Orchard Parkway
San Jose, CA 95131, USA
Tel: 1(408) 441-0311
Fax: 1(408) 487-2600

Regional Headquarters

Europe

Atmel Sarl
Route des Arsenalux 41
Case Postale 80
CH-1705 Fribourg
Switzerland
Tel: (41) 26-426-5555
Fax: (41) 26-426-5500

Asia

Room 1219
Chinachem Golden Plaza
77 Mody Road Tsimshatsui
East Kowloon
Hong Kong
Tel: (852) 2721-9778
Fax: (852) 2722-1369

Japan

9F, Tonetsu Shinkawa Bldg.
1-24-8 Shinkawa
Chuo-ku, Tokyo 104-0033
Japan
Tel: (81) 3-3523-3551
Fax: (81) 3-3523-7581

Atmel Operations

Memory

2325 Orchard Parkway
San Jose, CA 95131, USA
Tel: 1(408) 441-0311
Fax: 1(408) 436-4314

Microcontrollers

2325 Orchard Parkway
San Jose, CA 95131, USA
Tel: 1(408) 441-0311
Fax: 1(408) 436-4314

La Chantrerie

BP 70602
44306 Nantes Cedex 3, France
Tel: (33) 2-40-18-18-18
Fax: (33) 2-40-18-19-60

ASIC/ASSP/Smart Cards

Zone Industrielle
13106 Rousset Cedex, France
Tel: (33) 4-42-53-60-00
Fax: (33) 4-42-53-60-01

1150 East Cheyenne Mtn. Blvd.
Colorado Springs, CO 80906, USA
Tel: 1(719) 576-3300
Fax: 1(719) 540-1759

Scottish Enterprise Technology Park
Maxwell Building
East Kilbride G75 0QR, Scotland
Tel: (44) 1355-803-000
Fax: (44) 1355-242-743

RF/Automotive

Theresienstrasse 2
Postfach 3535
74025 Heilbronn, Germany
Tel: (49) 71-31-67-0
Fax: (49) 71-31-67-2340

1150 East Cheyenne Mtn. Blvd.
Colorado Springs, CO 80906, USA
Tel: 1(719) 576-3300
Fax: 1(719) 540-1759

Biometrics/Imaging/Hi-Rel MPU/ High Speed Converters/RF Datacom

Avenue de Rochepleine
BP 123
38521 Saint-Egreve Cedex, France
Tel: (33) 4-76-58-30-00
Fax: (33) 4-76-58-34-80

Literature Requests

www.atmel.com/literature

Disclaimer: Atmel Corporation makes no warranty for the use of its products, other than those expressly contained in the Company's standard warranty which is detailed in Atmel's Terms and Conditions located on the Company's web site. The Company assumes no responsibility for any errors which may appear in this document, reserves the right to change devices or specifications detailed herein at any time without notice, and does not make any commitment to update the information contained herein. No licenses to patents or other intellectual property of Atmel are granted by the Company in connection with the sale of Atmel products, expressly or by implication. Atmel's products are not authorized for use as critical components in life support devices or systems.

© Atmel Corporation 2004. All rights reserved. Atmel® and combinations thereof, are the registered trademarks of Atmel Corporation or its subsidiaries. Other terms and product names may be the trademarks of others.



Printed on recycled paper.

3434BS-NETST-3/04