



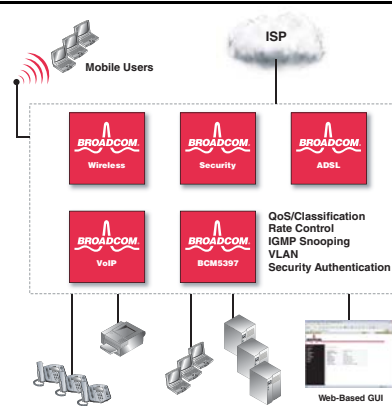
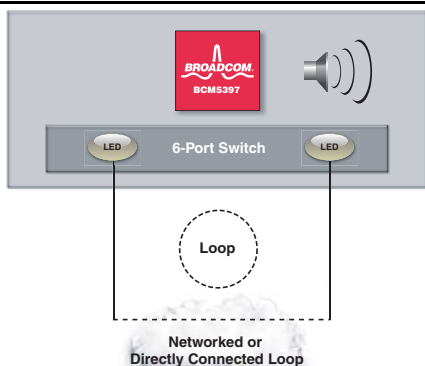
## 6-PORT GbE SWITCH WITH 5 INTEGRATED PHYS AND LoopDTech™

### FEATURES

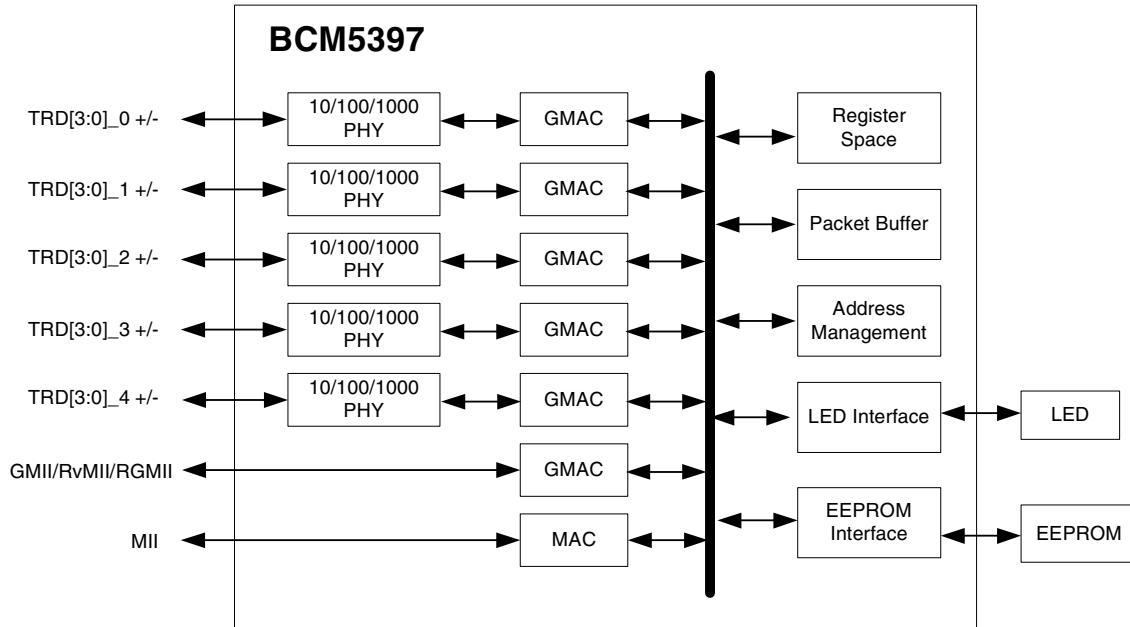
- **Highly integrated, non-blocking six-port 10/100/100 switch silicon. The switch integrates:**
  - Six Gigabit Ethernet ports with five integrated 10/100/1000 PHYs
  - One GMII/RGMII/RvMII interface can be used for IMP
  - One dedicated MII interface for WAN port
  - EEPROM, MDC/MDIO, SPI
- **Designed to help IT reduce network downtime and minimize installation, maintenance, and support effort**
  - Patented LoopDTech™ technology for loop detection without running Spanning Tree Protocol
  - CableChecker™ enables advanced cable diagnostics based on Broadcom convergence algorithm (unlike the traditional TDR-based)
- **VLAN**
  - IEEE 802.1Q-based VLAN with 4K entries
  - VLAN double tagging/QinQ trunking
- **QoS**
  - Four CoSs per port; WRR, strict priority, high-Q preempt
  - MAC, port, and DiffServ-based QoS
- **Performance**
  - Jumbo frame support
  - 4K MAC addresses with automatic learning and aging
  - 128 multicast group support
  - 128-KB packet buffer
- **Security**
  - IEEE 802.1x for secure user authentication, port mirroring
- **Traffic control and network resiliency**
  - Storm and rate control
  - MAC-based trunking with automatic link failover
  - Spanning tree support (multiple spanning trees—up to 16)
  - IGMP snooping
  - IEEE 802.3x and IPv4/v6
- **Management**
  - MIB counters to collect, receive, and transmit statistics for each port
  - Support for WebSuperSmart™ (a web-interface-based management tool provided by Broadcom)
- **Other**
  - 1.0V and 2.5V, typical power consumption 3.1W
  - JTAG and 452-PBGA package

### SUMMARY OF BENEFITS

- Provides cost-effective solution to reduce the cost of system designs
- Additional interfaces enable efficient designs for Broadcom WebSuperSmart, lightly managed, and SOHO router/gateway
- Two Broadcom patented features, LoopDTech and CableChecker, bring unique solutions to solve network loop and cable problems, while greatly reducing operating costs
- VLAN ensures proper layer 2 subnetting and security
- Double tagging enables private VLAN
- Supports all types of client connections including VoIP, video, multimedia, and data—proper priority can be assigned to each traffic type to ensure delivery of time-sensitive packets and efficient use of network bandwidth
- Line rate and nonblocking performance in an SMB switch ensure greater benefit for the money
- Highly integrated and scalable design for a large number of client connections, which prolongs the life of the switch as the number of users increases, thereby reducing the cost of network expansion
- Increases network security and blocks unwanted access
- Provides simple troubleshooting of security problems
- Increases network security and resiliency, enhancing workplace efficiency and minimizing IT support cost
- IGMP snooping enables multicast switching without expensive L3 multicast routing
- QoS, VLAN, and rate control—with the effective BCM5397 security—provide control over who is connected, what resources are assigned to users, and how much bandwidth is granted
- Provides the convenience of remote management using SNMP or RMON
- With easy-to-use WebSuperSmart, very little training is required to manage the BCM5397, further reducing IT costs
- Low power consumption and fanless/heatsink-less designs



## OVERVIEW



The BCM5397 is a highly-integrated, smart-managed Gigabit switch. The switch design is based on the field-proven industry leading BCM5385. The BCM5397 combines all the functions of a high-speed switch system including five full-duplex 10/100/1000 BASE-T/TX Ethernet transceivers, a packet buffer, media access controllers (MACs), and a non-blocking switch fabric into a single 0.13 $\mu$  CMOS device. In addition, the BCM5397 has one GMII/RGMII/MII/RvMII interface for a CPU or a PON/DSL/cable router chip and one MII interface that can be connected to a WAN port. It complies with the IEEE 802.3 and IEEE 802.3x specifications including the MAC control PAUSE frame, providing compatibility with all industry-standard Ethernet, Fast Ethernet, and Gigabit Ethernet devices.

In one compact silicon chip, the BCM5397 also features VLAN, VLAN double tagging, per-port QoS, jumbo frame, rate control, and MIBs management. Additionally, two Broadcom patented technologies, LoopDTech™ and CableChecker™, allow the BCM5397 to reduce the user effort and cost of troubleshooting cable problems and loops during installation and for post-install support. LoopDTech also eliminates the cost of hardware and software required to run spanning tree protocol.

CableChecker, unlike traditional TDR-based cable diagnostics, can detect cable and connector problems without having to disconnect the cable from the other end and interrupt live traffic, enabling it to run while the switch is passing packets. With Broadcom WebSuperSmart™, a customized web-based management interface, network support personnel can monitor and troubleshoot network problems remotely, an important feature in an SMB environment where IT resources are scarce.

In addition, the BCM5397 contains all the features to enable SMB-in-a-box, which can be connected to voice, multimedia, and data devices all at once. With the support for per-port QoS/queuing and rate control, various packet types can be identified and prioritized within the switch, and voice packets can be assigned with higher priority for outbound.

With such a rich feature set, the BCM5397 is suitable not only for unmanaged and lightly/smart-managed GbE connectivity for desktop and laptop PCs but also for next-generation gaming consoles, set-top boxes, networked DVD players, and home theater receivers. Broadcom's turnkey solution approach (silicon chip, reference boards, and management software) greatly accelerates TTM for customers.

**Broadcom®**, the pulse logo, **Connecting everything®**, the Connecting everything logo, LoopDTech™, CableChecker™, and WebSuperSmart™ are among the trademarks of Broadcom Corporation and/or its affiliates in the United States, certain other countries and/or the EU. Any other trademarks or trade names mentioned are the property of their respective owners.

Connecting  
**everything®**



**BROADCOM CORPORATION**  
16215 Alton Parkway, P.O. Box 57013  
Irvine, California 92619-7013

© 2006 by BROADCOM CORPORATION. All rights reserved.

5397-PB00-R 01/04/06

Phone: 949-450-8700  
Fax: 949-450-8710  
E-mail: [info@broadcom.com](mailto:info@broadcom.com)  
Web: [www.broadcom.com](http://www.broadcom.com)