BROADCOM®

Connecting
e v e r y t h i n g®

BCM5365/BCM5365P
PRODUCT Brief

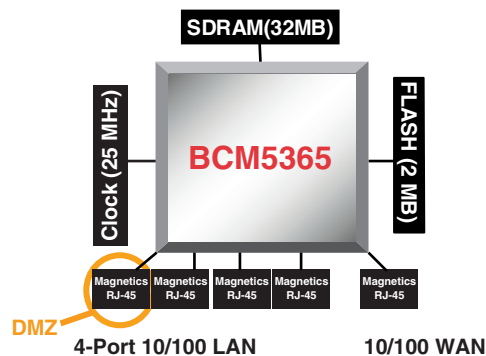# SENTRY 5 PRODUCT LINE: BCM5365/BCM5365P SECURED SWITCH PROCESSORS

FEATURES

- **The most highly integrated access security processors**
- **5-port 10/100 Ethernet switch with integrated PHY (TX/FX)**
  - IEEE 802.1Q (VLAN) support; IEEE 802.1P (4 Priority Queues - CoS, QoS), DiffServ, ToS support; IEEE 802.1D (Spanning Tree) support
  - 802.1X protocols, IP multicast, IGMP snooping for video streaming applications, broadcast suppression, and hosting of multiple subnets
  - 128-KB on-chip packet buffer
- **Complete on-chip IPSec processing**
  - Supports AES, DES, 3DES, HMAC-SHA1, HMAC-MD5, SHA-1, MD5
  - 75-Mbps AES/3DES/HMAC-SHA1
  - Single-pass encryption and authentication
- **General purpose 200-MHz MIPS32™ Processor·**
  - 8 KB of instruction cache, 4 KB of data cache
- **Supports Linux®, and VxWorks® operating systems**
- **BCM5365P supports PCI 2.2, 32-bit/33-MHz host/slave interface**
  - Supports four additional PCI devices in host mode
- **Extensive interface flexibility**
  - Interface to flash memory (up to 32 MB)
  - Interface to SDRAM/DDRAM (up to 512 MB, 100 MHz)
  - GPIO, USB, UART interface
- **JTAG/EJTAG support**
- **400-pin PBGA package**
- **Low power, 1.8V core, 3.3V I/O operation**
- **Linux Open Source application software support**
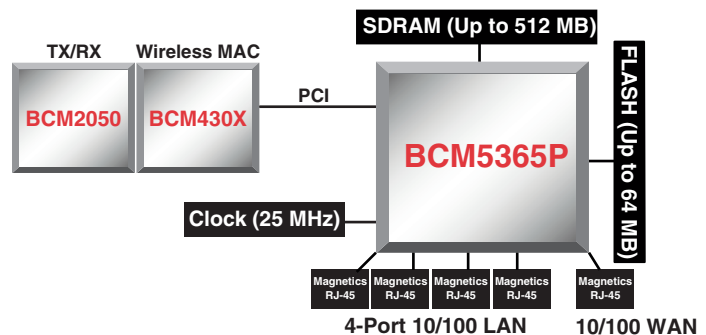 - Third-party software support

SUMMARY OF BENEFITS

- **System-on-a-chip solution offers optimal price/performance ratio and form factor, low power dissipation, and fastest time to market**
- **Integration of managed five-port Fast Ethernet switch**
- **Integration of MIPS32 CPU with silicon-proven IPSec processor facilitates complete packet processing in one pass for multiple policy-based packet routing and/or packet transformations (firewall, NAT, VPN, QoS)**
- **Enables advanced application development with industry-standard operating systems/platforms/tools**
- **Widely proliferated high-performance MIPS32 CPU enables advanced application development with industry-standard operating systems/platforms/tools**
- **Extensive application software offered**
  - IPSec (VPN), PPTP (passthrough), PPPoE client
  - NAT, filtering (IP, TCP), dynamic firewall, DMZ
  - Ethernet routing, static routing, DHCP server/client
- **Compatible with other Broadcom devices, enabling optimal system-level form factor, costs, and power dissipation**

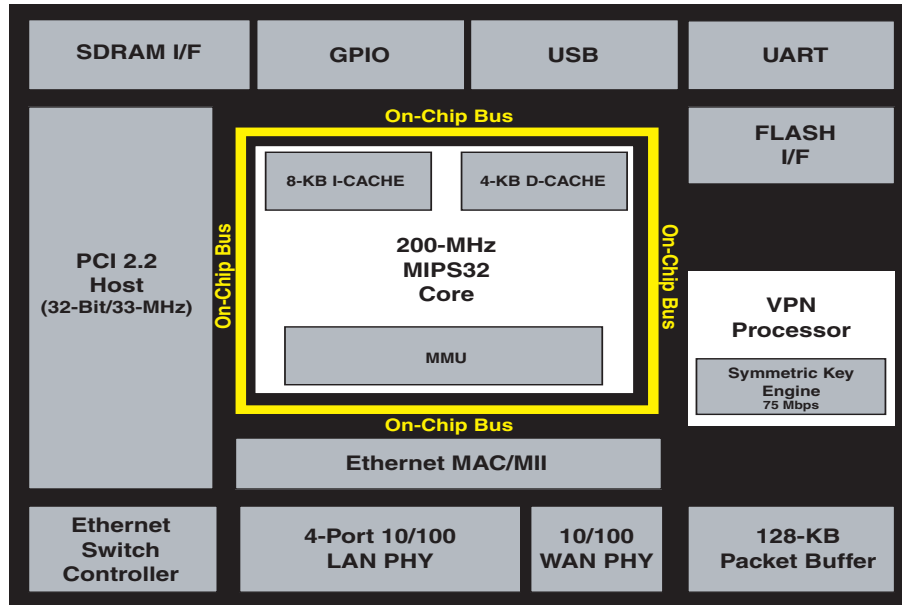## BCM5365/5365P-Based System Applications

BCM5365-Based Wired Home Router

BCM5365P-Based Wireless Router

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| SDRAM I/F | GPIO | USB | UART |

On-Chip Bus

8-KB I-CACHE | **4-KB D-CACHE**

PCI 2.2 Host (32-Bit/33-MHz)

On-Chip Bus

200-MHz MIPS32 Core

MMU

On-Chip Bus

FLASH I/F

VPN Processor

Symmetric Key Engine 75 Mbps

On-Chip Bus
Ethernet MAC/MII

| Ethernet Switch Controller | 4-Port 10/100 LAN PHY | 10/100 WAN PHY | 128-KB Packet Buffer |

Note: PCI Interface Supported in 5365P Only

Broadcom's **BCM5365** and **BCM5365P**, two System-On-Chips, are the most highly integrated access secure switch processor there are. The **BCM5365/BCM5365P** also features an on-chip, five-port 10/100 Ethernet switch with management features. This secured switch processor also offers extensive processor and interface integration featuring an integrated 200-MHz MIPS32™ core, UART, flash and SDRAM/DDRAM interfaces. The **BCM5365P** also supports a PCI interface. The **BCM5365/BCM5365P** (via dedicated cores) supports a wide range of cryptographic algorithms: AES (up to 256-bit CTR and CBC modes), DES, 3DES (CBC), HMAC-SHA1, HMAC-MD5, SHA1 and MD5. Both the devices support IPSec encryption and authentication in a single pass.

The integrated 200-MHz MIPS32™ core of the **BCM5365/BCM5365P** has a 2-way set-associative 8-KB instruction cache and a 4-KB data cache The CPU includes the MMU, which enables support for various RTOS.

The **BCM5365/BCM5365P** also supports interfaces that enable system-level cost savings, a better form factor, and lower power dissipation. The **BCM5365/BCM5365P** supports up to 512 MB of SDRAM/DDRAM and 64 MB of flash memory.

The **BCM5365P** also supports the PCI version 2.2, 32-bit/33-MHz host interface, allowing enumeration of four external PCI peripherals as a way to extend system functionality. The UART enables a glueless interface to serial devices such as modems.

Broadcom provides its proven IPSec API and drivers for integration with third-party application software. Broadcom also offers application software to build complete system applications. Application software support includes functions such as firewall (dynamic firewall, DMZ hosting, filtering-IP/TCP, NAT/PAT), VPN (IKE engines, IPSec drivers and API, PPTP-passthrough, PPPoE client-PAP and CHAP authentication), QoS/CoS/ToS (static and dynamic Ethernet routing, VLAN tagging), and many other features.

A single **BCM5365/BCM5365P** based platform is easy to reuse for other types of access to market segment equipment ranging in throughput performance from T1/E1 to 100 Mbps. This equipment includes wireless and wired home/residential and SOHO firewall and VPN appliances, wireless access points, and many types of customer premises equipment (CPE) devices.

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