



## SENTRY5™ PRODUCT LINE: BCM5384 SECURED SWITCH PROCESSOR

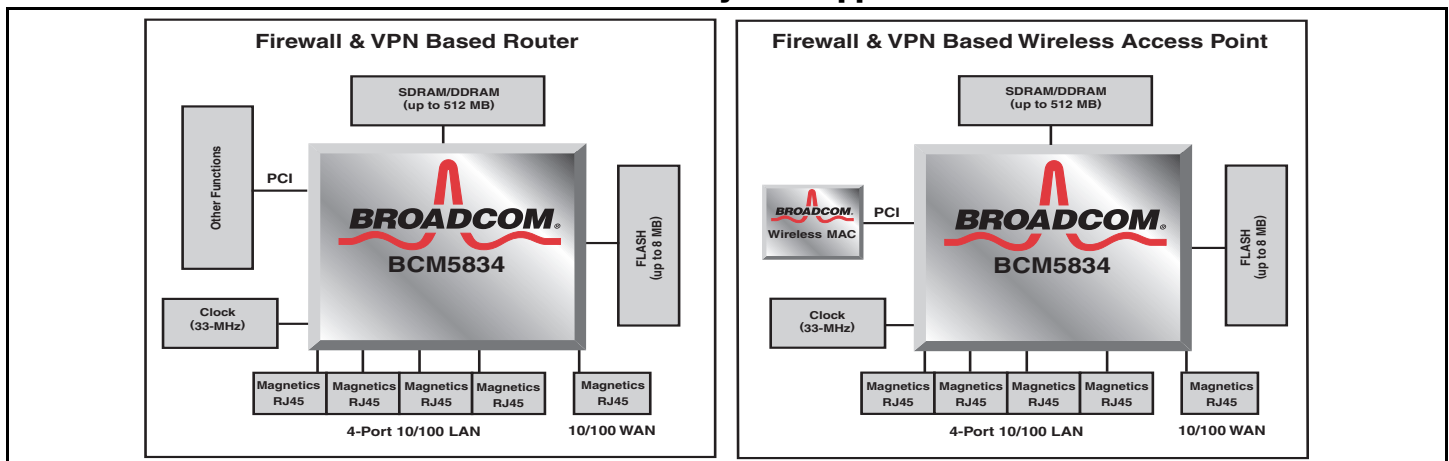
### FEATURES

- The most highly-integrated access security processor
- **Complete on-chip IPSec packet processing**
  - Supports AES, DES, 3DES, HMAC-SHA1, HMAC-MD5, SHA-1, MD5, Diffie-Hellman, RSA, DSA
  - On-chip public key logic (2048-bit key size) and true random number generator
  - 150-Mbps AES/3DES/HMAC-SHA1 and 100 DH/sec
  - Single-pass encryption and authentication
- **General purpose 200-MHz MIPS32™ Processor**
  - 8 KB of instruction cache, 4 KB of data cache
  - Instructions for DSP algorithm optimization
  - Supports Linux<sup>®</sup>, VxWorks<sup>®</sup> and WinCE<sup>®</sup> operating systems
- **5-port 10/100 Ethernet switch with integrated PHY**
  - Up to 4 10/100 LAN ports and 1 10/100 WAN port
  - 128-KB on-chip packet buffer
  - Supports VLAN, DiffServ, ToS, CoS tagging
- **PCI 2.3, 32-bit/33-MHz host/slave interface**
- **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**

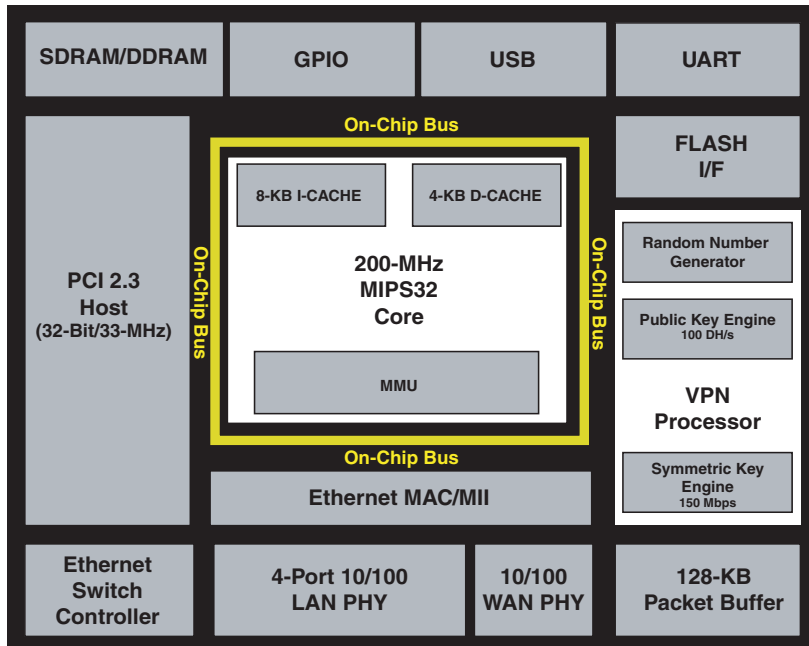
### SUMMARY OF BENEFITS

- System-on-a-chip solution offers optimal price/performance ratio and form factor, low power dissipation, and fastest time to market
- Integration of 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
- Enables use of one firewall and VPN system solution across different types of access equipment, such as appliances and routers deploying similar services

### BCM5384-Based System Applications



## OVERVIEW



Broadcom's **BCM5834**, a System-On-Chip, is the most highly integrated access security processor there is. This security processor offers extensive processor and interface integration featuring an integrated 200-MHz MIPS32™ core, PCI, UART, flash and SDRAM/DDRAM interfaces. The **BCM5834** also features an on-chip 5-port 10/100 Ethernet switch.

The **BCM5834** (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, MD5, Diffie-Hellman, RSA, and DSA. The **BCM5834** supports IPSec encryption and authentication in a single pass. The **BCM5834** also has an on-chip true random number generator.

The integrated 200-MHz MIPS32™ core of the **BCM5834** has a 2-way set-associative 8-KB instruction cache and a 4-KB data cache. It includes a 32 × 32-bit single-cycle multiply/accumulate function and specific instructions for various DSP operations such as communications, audio, and video applications. The CPU includes the MMU, which enables support for various RTOS.

The **BCM5834** also supports interfaces that enable system-level cost savings, a better form factor, and lower power dissipation.

The **BCM5834** supports up to 512 MB of SDRAM/DDRAM and 32 MB of flash memory.

The **BCM5834** 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 & API, PPTP-passthrough, PPPoE client—PAP & CHAP authentication), QoS/CoS/ToS (static and dynamic Ethernet routing, VLAN tagging), and many other features.

A single **BCM5834** based platform is easy to reuse for other types of access to market segment equipment ranging in throughput performance from T1/E1 to 150 Mbps. This equipment includes T1/E1 routers, SOHO routers, ROBO firewall & VPN appliances, wireless access points, and many types of customer premises equipment (CPE) devices.

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