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BCM5801
PRODUCT
Brief

BCM5801 CRYPTOGRAPHIC PROCESSOR

BCM5801 FEATURES

- **High-performance single-chip cryptographic processor**
- **Supports DES, 3DES, HMAC- SHA-1 and HMAC-MD5**
- **Single-pass encryption and authentication of packet data**
- **200 Mbps IPSec (3DES, SHA-1) in-system performance, with new Security Association (SA) per packet**
- **Unlimited SA support via system memory**
- **Compatible with SSH IPSec software**
- **Supports multi-packet processing and pre-fetch of packet data and context**
- **Multi-threaded DMA allows multi-packet processing with single PCI writes**
- **Accommodates most PCI latency problems without performance degradation**
- **66-MHz operating frequency**
- **PCI 2.2 interface, 32-bit, 33/66 MHz**
- **Low-power 3.3V design**
- **144-pin DQFP package**

SUMMARY OF BENEFITS

- **Low-cost, easy-to-design-single-chip security solution**
  - Smallest footprint
  - Lowest system cost
- **Sustainable real-world performance**
  - DMA supports multi-packet processing
  - Pre-fetch of new context and packet
- **Flexible, easy-to-use PCI 2.2 interface**
  - No external components required
  - Ideal for low-cost add-in card applications
  - Compatible with all existing PC systems
- **Complete product solution minimizes time-to-market**
  - Software Reference Library (SRL) including a hardware abstraction software layer
  - Compatible with industry standard SSH IPSec software
- **Flexible VPN solution for all data security applications:**
  - Firewalls
  - VPN appliances
  - Client applications
  - IPSec acceleration

BCM5801 Cryptographic Add-In Card System Diagram
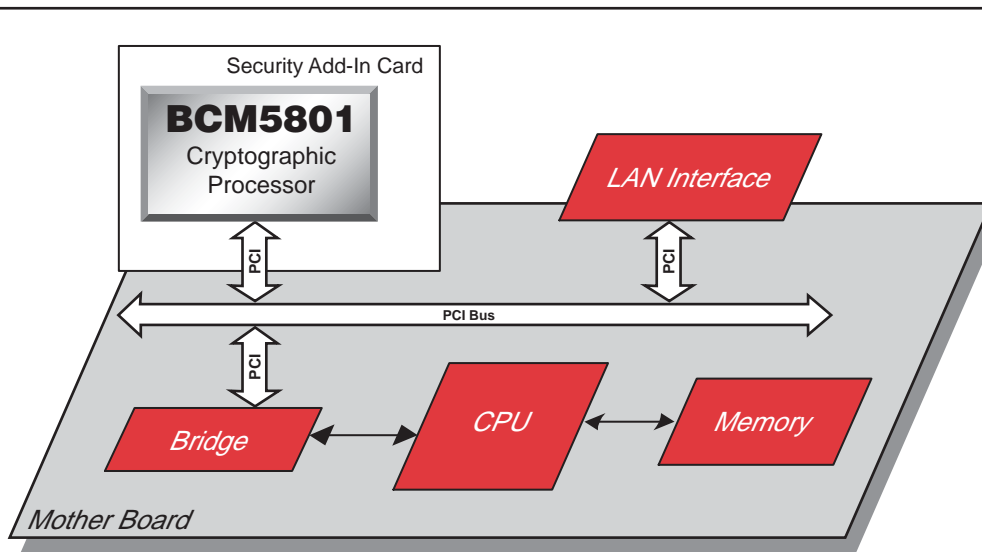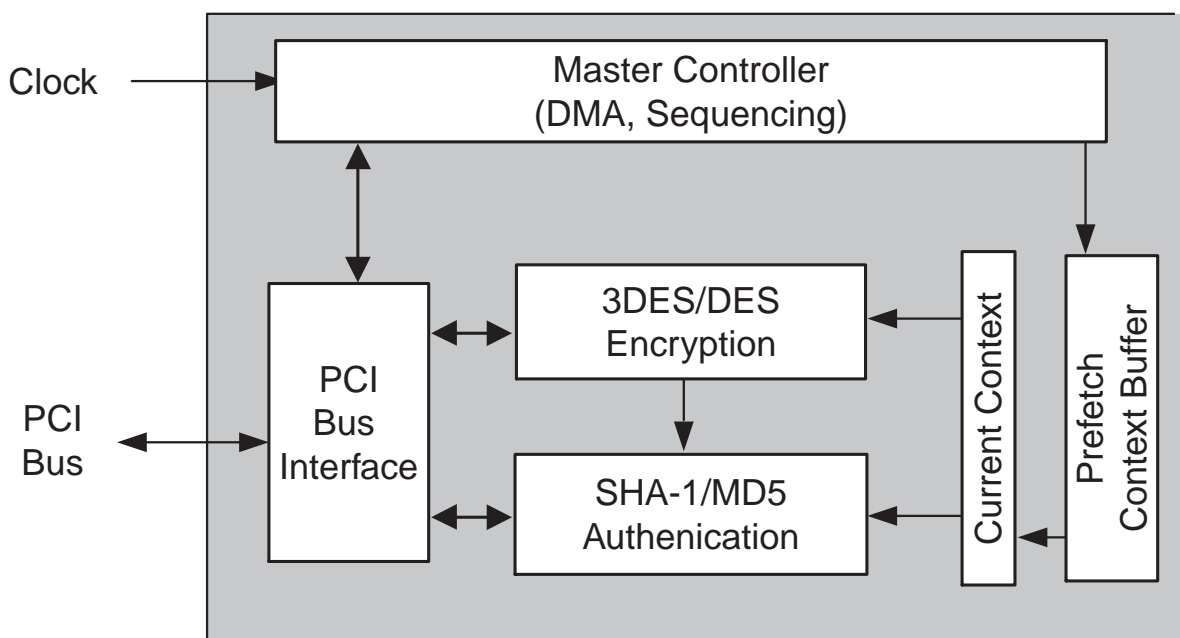
The **BCM5801** Cryptographic Processor integrates a high-performance IPSec engine (DES, 3DES, HMAC-SHA-1, HMAC-MD5), PCI interface and context buffer memory into a single chip. Ideally suited for cost-sensitive client applications, the **BCM5801** Cryptographic Processor offers tremendous performance in a compact design. Offering hardware acceleration for IPSec cryptographic functions makes the **BCM5801** an ideal solution for applications such as SOHO routers and gateways, firewalls, VPN appliances, and network interface cards.

The **BCM5801** provides complete 200-Mbps IPSec processing (3DES, HMAC-SHA-1) performance in a highly integrated design. The **BCM5801** offers a unique combination of performance and cost-optimization by integrating the necessary functional blocks into a single chip.

The **BCM5801**'s PCI interface makes it a perfect solution for all cost-sensitive security applications. Requiring no external components, the **BCM5801** is ideal for add-in card applications requiring IPSec acceleration. A multi-threaded DMA engine utilizes system memory to maximize throughput in real-world applications. Unlimited security association (SA) support via system memory, and the ability to pre-fetch packet contexts, minimizes the performance degradation when processing small packets.

Application program interface (API) support through Broadcom's Software Reference Library (SRL) for IPSec application software offers **BCM5801** users a complete system solution. Compatibility with industry-standard SSH IPSec software eases integration and reduces time to market.

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