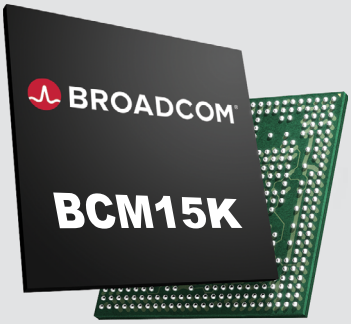
Product Brief

BCM15000

Knowledge-Based Processor



Applications

- IPv4 and IPv6 Packet Classification
- Access Control Lists
- Policy-based Routing & QoS
- IPv4 and IPv6 Longest Prefix Match
- Flow-based Access Control Lists

Overview

The BCM15000 Knowledge-Based Processor (KBP) performs high-speed operations on large-rule databases for a wide range of telecommunications applications, including Data Center and Enterprise switches and routers. It provides network awareness and enables real-time modifications and updates to the routing configuration, making it ideal for packet classification, policy enforcement, and forwarding.

This family of KBPs addresses next-generation classification needs through high-performance parallel decisions and improved entry storage capabilities. Up to eight parallel operations allow the device to reach decision speeds of multiple Billion Decisions Per Second (BDPS). Embedded Error Correction Circuitry (ECC) improves system testability and operational reliability. The key processing unit (KPU) and the context buffer (CB) enable efficient interface transfers with flexible search key construction.

Features

- Dual host enables two host devices to connect to one KBP.
- Device available in 2048k/1024k/512k 40b database entries.
- KBP tables width configurable as 80/160/320/480/640 bits.
- User Data Array for associated data, width configurable as 32/64/128/256 bits.
- Context Buffer for storing master search keys.
- Up to eight parallel searches enabling up to eight results per operation.
- Simultaneous Multithreading (SMT) operation.
- Logical Tables provide support for intelligent database management.
- Key Processing Unit (KPU) for flexible search key construction.
- Result Buffer provides programmability for flexible routing of search results.
- Range Matching for efficient storage utilization.
- Advanced low-power modes.
- ECC on User Data and Database Array. Parity protection on all embedded memories.
- Background ECC scan for database entries with provision for 1b auto correction and 2b error detection.

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