

Key Features

- Integrated IEEE 1914.3 Radio-over-Ethernet (RoE) mappers with built-in de-jitter buffers
- 64 SerDes:
 - 24× 25G dual-mode CPRI/Ethernet
 - 2.5G to 25G CPRI
 - 1GbE to 100GbE
 - 16× 25-Gigabit Ethernet (1GbE to 100GbE)
 - 24× 10-Gigabit Ethernet (1GbE to 10GbE)
- Up to 800 Gb/s and 496M packets/second with 256B RoE packets
- IEEE 1588v2/SyncE solution with integrated telecom DPLL and nanosecond-scale time stamping
- IEEE 802.1Qbu preemption
- Centralized, flow-based MACsec
- Per-AxC compression engines
- Structure-agnostic mapping mode to support carrier isolation over a shared infrastructure
- 42.5-mm × 42.5-mm FCBA package

BCM56670

Aggregation Switch with Radio-over-Ethernet Mappers

Description

The introduction of the Broadcom® BCM56670 heralds a fundamental transformation in the design of mobile networking equipment. With built-in IEEE 1914.3 Radio-over-Ethernet (RoE) mappers, the BCM56670 is the first Ethernet switch in the market that performs CPRI/Ethernet interworking and allows direct connections to CPRI-based radios and baseband processors.

Continued support of the installed base of legacy radios is a critical requirement for next-generation mobile network equipment. The current radios span multiple generations, from GSM to LTE Advanced, and require front-haul data rates ranging from 2.4G to 9.8G. In the near future, the deployment of 25G radios will significantly increase the complexity of this challenge. The BCM56670 is designed to solve this problem. The integrated RoE mappers are fully configurable by the user. Formatting of I&Q data, RoE packet length and header format, and C&M channel configuration can all be tailored with precision. In addition to enabling the support of a wide range of connectivity scenarios, user configurability also ensures that valuable IP is protected.

The coming 5G revolution in mobile networking has two main aspects:

- Front-haul capacity of the network is projected to grow by a factor of 50 or more.
- The mobile network will undergo seamless integration into an end-to-end platform stretching from the radio head to the data center.

In this new architecture, many traditional mobile networking functions will run as virtual tasks on data center-style servers. The BCM56670, which inherits the technology and sophistication of Broadcom's data center portfolio, is the ideal gateway between the legacy cellular world and tomorrow's 5G network.

Benefits

- Flexible, user-configurable RoE mappers provide support for legacy, current, and future solutions, and enable full protection of user IP.
- 24 dual-mode CPRI/Ethernet RoE mappers enable low-cost, high-density designs.
- Fully integrated, high-performance IEEE 1588v2/SyncE solution reduces cost and power consumption by allowing external synchronization solutions to be removed from designs.
- Rich set of Ethernet switching functions, including L2, L3, MPLS, and VxLAN, enables full integration of BCM56670-based products with modern Ethernet metro and data center networks.
- Configurable bandwidth, supporting legacy 2G/3G, LTE, and future 5G services.

Benefits (Con't)

- Traffic from multiple carriers, including separate synchronization traffic, can be transported over a common infrastructure by using the RoE mapper's structure-agnostic mode. In this mode the bit streams are encapsulated and transported as-is, thus avoiding any interoperability issues. The integrated synchronization solution enables the faithful reconstruction of the independent clock signals at either end of the RoE link.
- Preemption on low-speed links can enable significant front-haul reach extension, even in the presence of interfering jumbo frames.
- Software Development Kit (SDK), a mature software platform enabling the rapid development of robust, production-ready code-based products with modern Ethernet metro and data-center networks.

Figure 1: BCM56670 RoE Switch

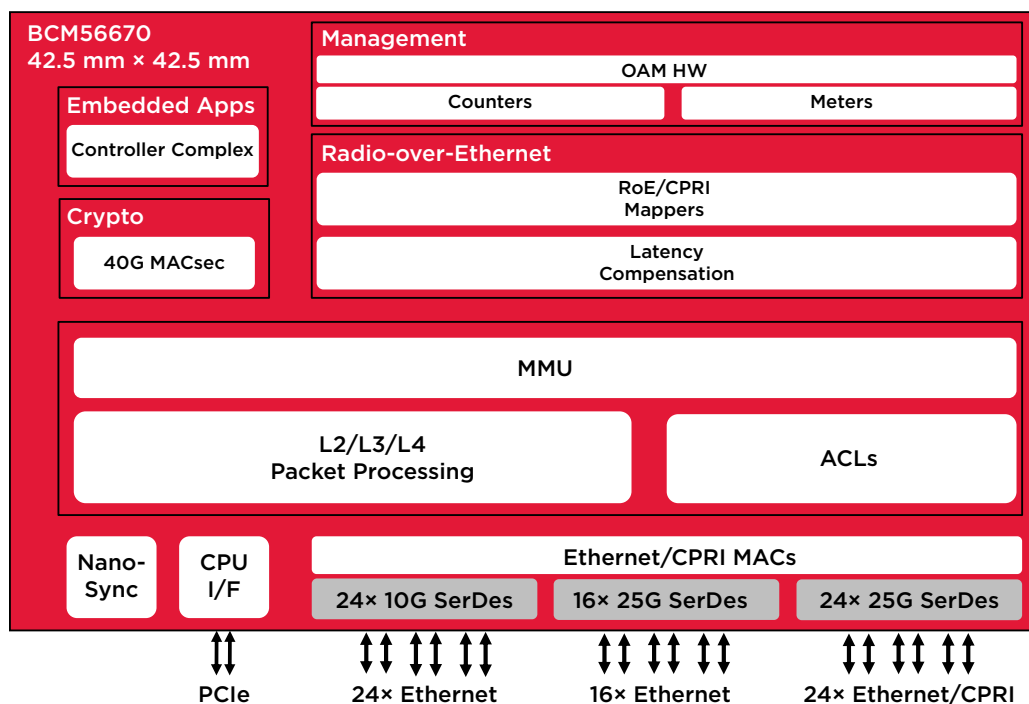
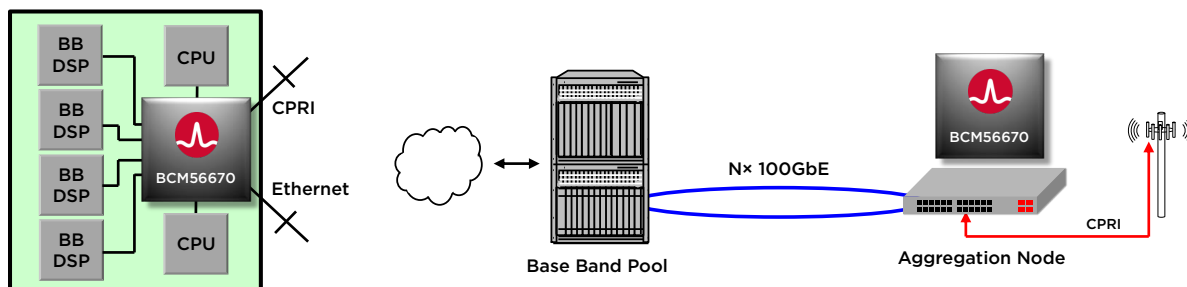


Figure 2: Typical Deployment Scenarios: BTS Line Card (Left); Front-haul Aggregation Node (Right)



Ordering Information

800-Gb/s RoE switch with integrated CPRI mappers

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