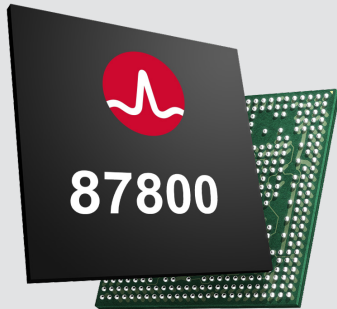


# BCM87800

## 7-nm CMOS 800GbE (8:8) PAM-4 PHY



### Applications

- Hyperscale data center deployments inside 800G QSFP-DD/OSFP optical modules
- 800G DR8
- 2 × 400G DR4/FR4
- Co-packaged optical solutions

### Overview

The Broadcom® BCM87800 is the industry's highest-performance and lowest-power single-chip 800GbE PAM-4 PHY transceiver capable of driving eight lanes of 106-Gb/s PAM-4 at 53 Gbaud, while supporting DR8 and 2xFR4 optical links.

The BCM87800 leverages Broadcom's market-leading 7-nm PAM-4 PHY transceiver technology platform already proven with the BCM8740X PHY, and it provides a path to accelerating 800G QSFP-DD/OSFP optical module availability. Broadcom's advanced DSP technology and equalization techniques compensate for optical impairments while maintaining the world's lowest power to enable the deployment of 25.6 Tb/s and higher-density switch ASICs inside pluggable optical modules and co-packaged optical solutions.

The BCM87800 incorporates a highly differentiated feature set, including integrated voltage regulators and 400G FEC capability to provide unmatched competitive advantage to the market.

In 800GbE mode, the BCM87800 drives eight lanes of 106 Gb/s (at 53-Gbaud PAM-4) from the system side into eight lanes of 106 Gb/s (at 53 Gbaud PAM-4) to enable next generation of high-density optical PAM-4 links inside QSFPDD-800 and OSFP form-factor modules.

The on-chip clock synthesis is performed by a low-cost 156.25-MHz reference clock through high-frequency, low-jitter phase-locked loops (PLLs).

### Features

- Industry-leading DSP performance and power efficiency enabling DR8/2xFR4 optical modules to meet IEEE standards and MSA specifications
- Proven PAM-4 architecture supporting multiple optics front-ends including EML, DML, and silicon photonics
- Optimized design and proven interoperability with Broadcom switch ASICs and ASSPs using 100G PAM-4 SerDes architecture
- DSP platform supporting DR/FR optical modules for legacy switch applications
- Ultra-low power consumption using 7-nm process technology and small footprint packages with features for flexible board routing

Figure 1: Block Diagram

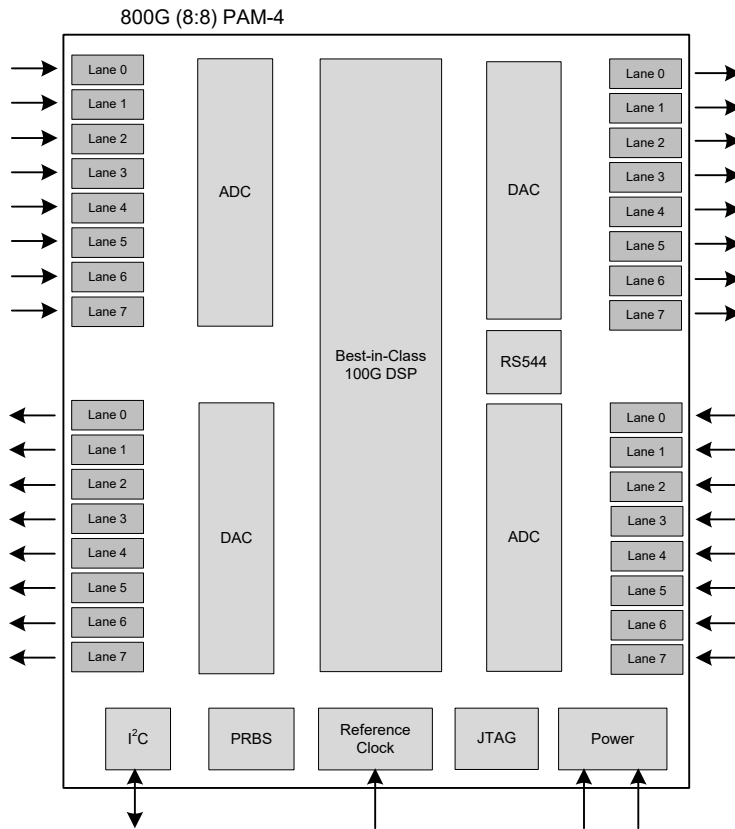


Figure 2: Application Diagram

