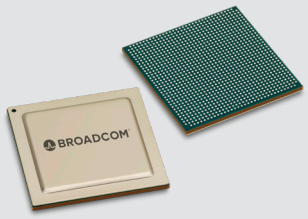
BROADCOM®

Product Brief

BCM87540

7-nm 200GbE 4-Channel PAM-4 Transceiver PHY



Applications

- 200GbE optical 4 × 50G PAM-4 or 100GbE 4 × 25G NRZ links for MMF/SMF
- 200GbE QSFP56 or 100GbE QSFP28 optical module form factors

Overview

The Broadcom® BCM87540 is a single-chip, low-power, low-latency PAM-4 PHY that integrates retimer and equalizer functions to support 200GbE applications. In 200GbE mode, the BCM87540 retimes, adds FEC (optional), and equalizes 4 × 50G PAM-4 host-side signals into 4 × 50G PAM-4 line-side signals, which drive the optical PAM-4 links inside the next-generation modules, including QSFP56.

The BCM87540 is compliant with the IEEE 100G and 200G AUI-C2M standards with KP4 FEC and FEC bypass capability.

The BCM87540 supports 100G 4 × 25G NRZ mode. In this mode, the device retimes and equalizes the incoming data from both the host and line sides at 4 × 25G NRZ rates.

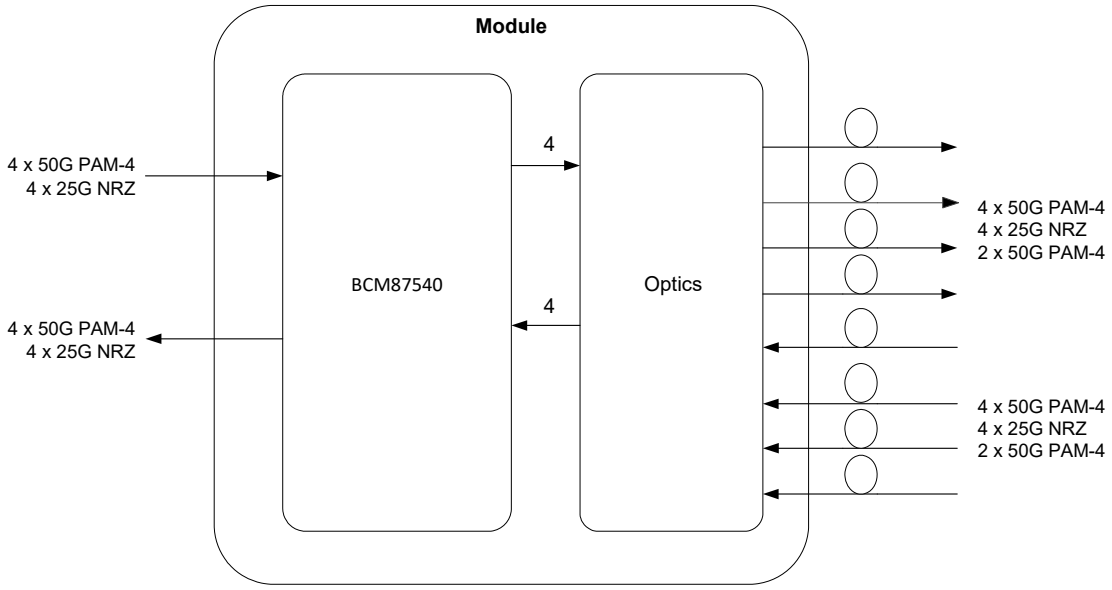
On-chip clock synthesis is performed by a low-cost 156.25-MHz reference clock using high-frequency, low-jitter phase-locked loops (PLLs).

The BCM87540 is fabricated in advanced low-power 7-nm CMOS technology. The BCM87540 is available in an 8 mm × 10 mm, 0.5-mm pitch, 285-ball BGA, RoHS-compliant package.

Features

- Single-chip 4 × 50G PHY drives 200GbE over optics
  - Client side: 4 × 50G PAM-4
  - Line side: 4 × 50G PAM-4
- Single-chip 4 × 25G drives 100GbE
  - Client side: 4 × 25G NRZ
  - Line side: 4 × 25G NRZ
- Supports 100GbE and 200GbE modes per the IEEE 100G and 200G AUI-C2M standards
  - Single 200GbE mode: 4 × 50G PAM-4 to 4 × 50G PAM-4
  - Single 100GbE mode: 4 × 25G NRZ to 4 × 25G NRZ
- Client-side interface is compliant with the
- IEEE 200GAUI-4 C2M and 100GAUI-4 C2M standards
- Supports various reach and media types
- Low-power 7-nm CMOS design
- Integrated AC-coupling capacitors for the client RX side
- Line-side and client-side loopbacks

Block Diagram



Ordering Information

Part Number	Package
BCM87540A0KFEBG	8 mm × 10 mm, 0.5-mm pitch, 285-ball BGA

87540-PB100 May 3, 2021