The BCM89810 is a 100 Mbps automotive Ethernet transceiver integrated into a single monolithic CMOS chip. The device performs all of the physical layer (PHY) functions for BroadR-Reach™ encoded Ethernet packets over single-pair unshielded twisted-pair copper wire, such as FlexRay™. The BCM89810 is designed to exceed automotive specifications for noise cancellation and transmission jitter, providing consistent and reliable operation over the broadest range of existing single-pair twisted-pair automotive cable plants.

- Single BroadR-Reach transceiver in a fully integrated 65 nm CMOS chip
- Full-duplex operation at the rate of 100 Mbps over one pair of UTP cable
- Fully integrated twisted-pair termination resistors
- Trace-matched output impedance

Specific architectural and design enhancements are utilized to increase design for test, reliability, and quality to surpass AEC-Q100 and EMC requirements.

- Designed to support IEEE 1588 timing function.
- Small size footprint support with 48-pin MLP package.
- Automotive cable diagnostics feature can detect pair open/short and distance.

### Overview

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### Architectural Features

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### Product Family Features

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### BCM89810 System Diagram
The BCM89810 is based on Broadcom's proven digital-signal processor technology, combining digital adaptive equalizers, ADCs, phase-locked loops, line drivers, encoders, decoders, echo cancellers, and all other required support circuitry. The BCM89810 is designed to be fully compliant with RGMII and MII interface specifications, allowing compatibility with industry-standard Ethernet media access controllers (MACs) and switch controllers.

The device detects and corrects polarity automatically. BroadR-Reach technology enables the BCM89810 to auto-negotiate and link up with BroadR-Reach compliant link partners.

The BCM89810 delivers the most comprehensive automotive technology solution required by OEM and Tier 1 suppliers, meeting or exceeding CISPR 25 component-level, ISO 11452-5 Stripline, ISO 11452-4, IEC 61000-4-2, AEC-Q100, and Grade 1 temperature range.

Ordering Information

<table>
<thead>
<tr>
<th>Part Number</th>
<th>48-pin MLP (RoHS-compliant package)</th>
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<td>BCM89810A1AMLG</td>
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About Broadcom

Broadcom Corporation is a major technology innovator and global leader in semiconductors for wired and wireless communications. Broadcom® products enable the delivery of voice, video, data and multimedia to and throughout the home, the office and the mobile environment. We provide the industry's broadest portfolio of state-of-the-art system-on-a-chip and software solutions to manufacturers of computing and networking equipment, digital entertainment and broadband access products, and mobile devices.

These solutions support our core mission: Connecting everything®.

Broadcom, one of the world's largest fabless communications semiconductor companies, with 2010 revenue of $6.82 billion, holds more than 4,800 U.S. and 2,000 foreign patents, and has more than 7,800 additional pending patent applications, and one of the broadest intellectual property portfolios addressing both wired and wireless transmission of voice, video, data and multimedia.

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