

BCM89884

Single-Port Automotive Ethernet Transceiver

Key Features

- Fully compliant with IEEE 802.3bw 100BASE-T1 and IEEE 802.3bp 1000BASE-T1
 - Integrated twisted-pair termination resistors
 - Trace matched output impedance
 - Integrated low-pass filter
 - Polarity detection and auto correction for 1000BASE-T1
 - Polarity detection and auto/manual detection for 100BASE-T1
 - Super Isolate mode
 - Automotive Cable Diagnostics support
 - Robust Cable ESD (CESD) tolerance
- Support for 1000BASE-T1/100BASE-T1 TC10
- Support for 1.8V, 2.5V, or 3.3V RGMII
- Line loopback
- Low EMI emissions and high immunity
- Support for packets up to 16 KB in 1000BASE-T1 mode
- Advanced low-power management with local and remote wake-up support
- Integrated LDO and Switching regulators allow single 3.3V supply operation
- IEEE 1149.1 (JTAG) boundary scan
- 40-pin WQFN package
- Pin compatible with the BCM89884M
- Operating Temperature Range: -40°C to +125°C (Grade 1)

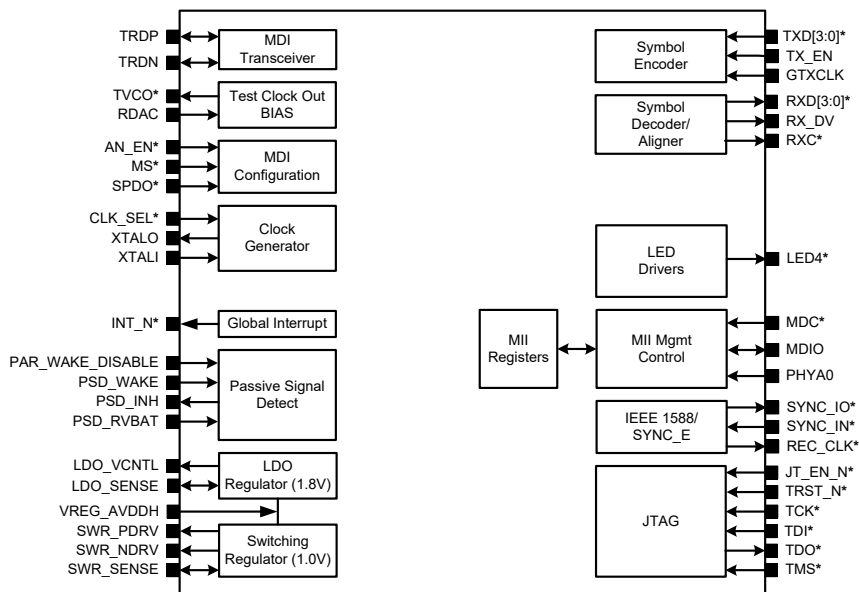
Overview

The Broadcom® BCM89884 is a 1000BASE-T1/100BASE-T1 automotive Ethernet transceiver integrated into a single monolithic CMOS chip that meets all AEC-Q100 requirements. The device performs all the physical layer (PHY) functions for 1000BASE-T1 and 100BASE-T1 encoded Ethernet packets over a single-pair of unshielded twisted-pair (UTP) cable or shielded twisted-pair (STP) cable.

The BCM89884 is designed to meet automotive specifications for EMI/EMC, noise cancellation, and transmission jitter, providing consistent and reliable operation over a broad range of existing single twisted-pair automotive cable.

The BCM89884 is based on the proven digital-signal processor technology by Broadcom that combines digital adaptive equalizers, ADCs, phase-locked loops, line drivers, encoders, decoders, echo cancelers, and all the other required support circuitry. The BCM89884 is designed to be compliant with the RGMII interface specifications, allowing compatibility with industry-standard Ethernet media access controllers (MACs) and switch controllers.

Functional Block Diagram



* These signals have multiple functions.