PRODUCT BRIEF

BRIGHTLANE™ 88Q1010 100BASE-T1 PHY

100 Mbps IEEE 802.3bw compliant automotive Ethernet PHY

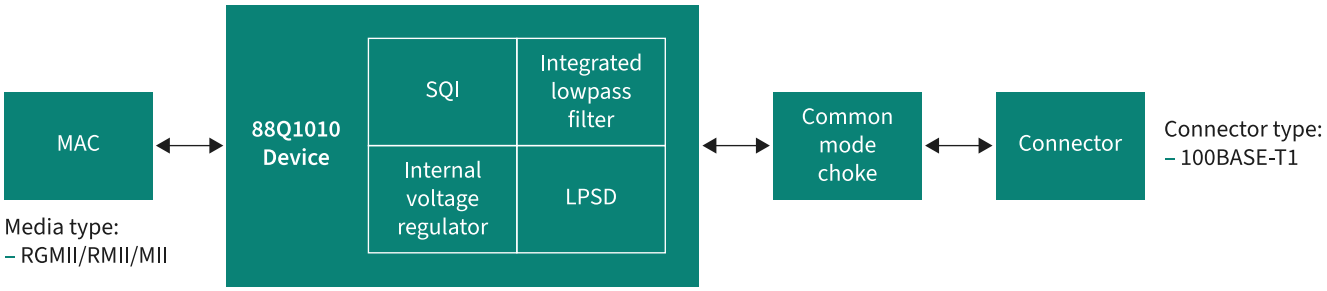
The BRIGHTLANE™ 88Q1010 solution is a single pair Ethernet physical layer transceiver (PHY) which implements the Ethernet physical layer portion of the 100BASE-T1 standard as defined by the IEEE 802.3bw task force. Ideally suited for a wide range of automotive applications, it is manufactured using a standard digital CMOS process and contains all the active circuitry required to implement the physical layer functions to transmit and receive data on a single balanced twisted pair.

88Q1010 integrates Media Dependent Interface (MDI) termination resistors into the PHY which simplifies the board layout and reduces board cost by reducing the number of external components. It has an integrated linear voltage regulator to generate all required voltages so the device can run off a single 3.3 V supply. The solution supports 1.8 V, 2.5 V, and 3.3 V LVCMOS I/O standards.

In addition, 88Q1010 uses advanced mixed-signal processing to perform equalization, echo, data recovery, and error correction at a 100 Mbps data rate to achieve robust performance and exceed automotive Electromagnetic Interference (EMI) requirements in noisy environments with very low power dissipation.

Finally, 88Q1010 is compatible to the footprint of the 88Q2110 100/1000BASE-T1 Ethernet PHY transceiver to ensure an upward path to 1 Gbps designs.

BRIGHTLANE™ 88Q1010 00BASE-T1 PHY



PRODUCT BRIEF

Key features

Features	Benefits
802.1AS and 1-step PTP	– Support for Precision Time Protocol (PTP)
Signal Quality Indicator (SQI)	– Signal Quality Indicator (SQI) tool provides Signal-to-Noise Ratio (SNR) data
Integrated virtual cable tester	– VCT tool used for cable diagnostics
Integrated passive filter network	– Reduced BOM/board space
Integrated LDO	– 3.3 V only operation
Low Power Signal Detect (LPSD)	– Capable of energy detect mode which consumes < 30 µA
Automotive package	– 40-QFN, 6.0 × 6.0 mm, 0.5 mm pitch, wettable flanks
Automotive qualified	– AEC-Q100 – Automotive grade 1 (-40 to +125°C)

Target applications

– Automotive infotainment systems
– Advanced driver assist systems
– Automotive diagnostics
– Body electronics

Standards

Infineon is a SIG adopter member of the OPEN Alliance, a non-profit, open industry alliance of automotive industry and technology providers collaborating to encourage wide scale adoption of Ethernet-based networks as the standard in automotive networking applications.

The BRIGHTLANE™ 88Q1010 solution is compliant with the IEEE 802.3bw standards.

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