PRODUCT BRIEF

BRIGHTLANE™ 88Q2110/88Q2112 100/1000BASE-T1 PHY

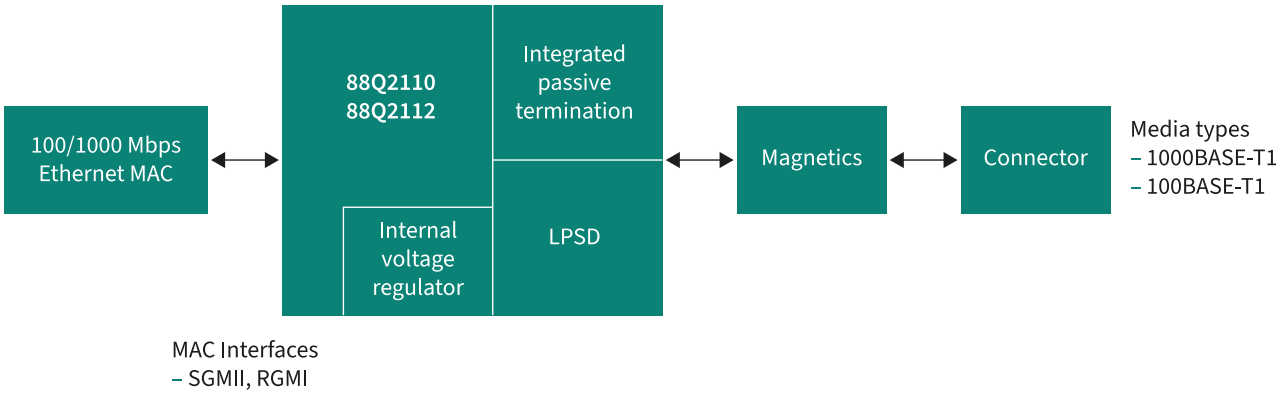
100/1000 Mbps IEEE 802.3bp compliant automotive Ethernet PHY

The BRIGHTLANE™ 88Q2110/88Q2112 solutions are single pair Ethernet physical layer transceivers (PHYs) that implement the Ethernet physical layer portion of the 100/1000BASE-T1 standard as defined by the IEEE 802.3bw and IEEE 802.3bp standard. Ideally suited for a wide range of automotive applications, they are manufactured using a standard digital CMOS process and contain all the active circuitry required to implement the physical layer functions to transmit and receive data on a single balanced twisted pair.

The BRIGHTLANE™ 88Q2110/88Q2112 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. Also, they support an integrated linear voltage regulator to generate all required voltages so the device can run off a single 3.3 V supply. Both solutions support 1.8 V, 2.5 V, and 3.3 V LVCMOS I/O standards.

In addition, 88Q2110/88Q2112 utilize advanced mixed-signal processing to perform equalization, echo and crosstalk cancellation, data recovery, and error correction at a data rate of either 100 Mbps or 1 Gbps. This is to achieve robust performance and exceed automotive Electromagnetic Interference (EMI) requirements in noisy environments with very low power dissipation.

BRIGHTLANE™ 88Q2110/88Q2112 block diagram



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Key features

Features	Benefits
Four RGMII timing modes including integrated delays	– Eliminates the need for adding trace delays on the PCB
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
Automotive package	– 40-pin QFN, 6 × 6 mm (88Q2110) – 48-pin QFN, 7 × 7 mm (88Q2112)
Automotive qualified	– AEC-Q100 – Automotive grade 2 (-40 to +105°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™ 88Q2110/88Q2112 solutions are compliant with the IEEE 802.3bw and IEEE 802.3bp standards.

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