

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

100/1000 Mbps IEEE 802.3bp compliant automotive Ethernet PHY

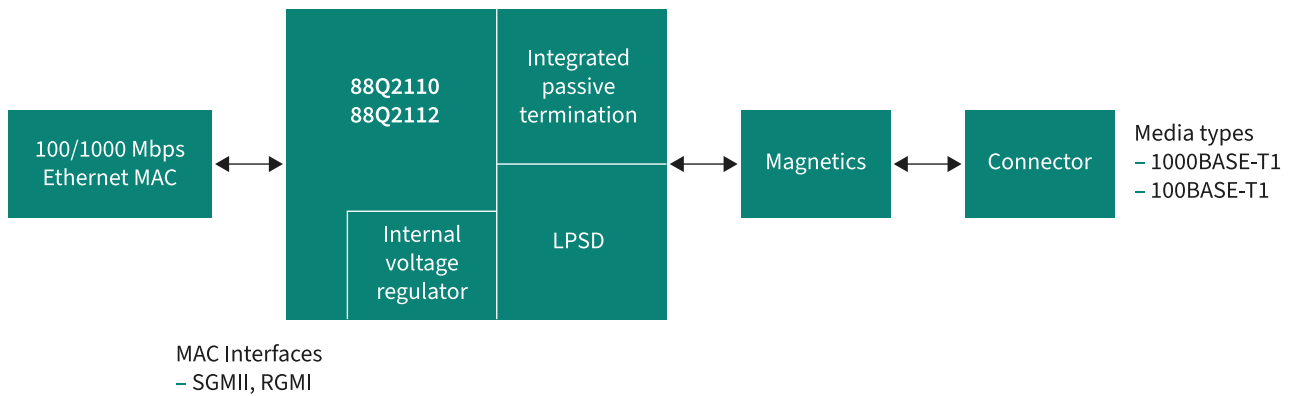
The BRIGHTLANE™ 88Q2110/88Q2112 solutions are single pair Ethernet physical layer transceivers (PHYs) that implement the Ethernet physical layer portion of the 100/1000BASE-T1 standard as defined by the IEEE 802.3bw and IEEE 802.3bp standard. Ideally suited for a wide range of automotive applications, 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



PRODUCT BRIEF

Key features

Features

Four RGMII timing modes including integrated delays

Signal Quality Indicator (SQI)

Integrated virtual cable tester

Integrated passive filter network

Integrated LDO

Automotive package

Automotive qualified

Benefits

– Eliminates the need for adding trace delays on the PCB

– Signal Quality Indicator (SQI) tool provides Signal-to-Noise Ratio (SNR) data

– VCT tool used for cable diagnostics

– Reduced BOM/board space

– 3.3 V only operation

– 40-pin QFN, 6 × 6 mm (88Q2110)

– 48-pin QFN, 7 × 7 mm (88Q2112)

– 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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Am Campeon 1-15, 85579 Neubiberg
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