PERICOM®

PI3EQX10964

10.0Gbps 8-Channel ReDriver™ with Equalization & De-Emphasis

Pericom Semiconductor's PI3EQX10964 is a lower power, high performance 8-differential channels ReDriver™.

The device provides per channel programmable equalization, output swing, de-emphasis, and amplifier gain.

The PI3EQX10964 provides master/slave I²C Control, to optimize performance over a variety of physical mediums by reducing Inter-symbol interference.

PI3EQX10964 supports eight 100-Ohm Differential data I/O's and extends the signals across other distant data pathways on the user's platform.

Pericom PI3EQX10964 offers programmable transmit de-emphasis (up to 9 dB), transmit V_{OD} (up to 1200 mVp-p) and receive equalization (up to 35.7 dB) to enable longer distrance transmission in lossy copper cables (10m+), or backplanes (40"+) with multiple connectors. The receiver is capable of opening an input eye that is completely closed due to inter-symbol interference (ISI) introduced by the interconnect medium.

The programmable settings can be applied easily via pins, software (I²C) or loaded via an external EEPROM. When operating in the EEPROM mode, the configuration information is automatically loaded on power up, which eliminates the need for an external microprocessor or software driver.

Features

➔ Support up to 11.3Gbps serial link

➔ Ideal for 10Gb and 40Gb Ethernet applications, 10Gb fiber channel, and 10Gb SFI, XFI and KR, up to 11.3Gbps data rates

➔ 4 bi-directional lanes (PI3EQX10964)

➔ Independent channel configuration of receiver equalization, output swing, de-emphasis, and amplifier gain

➔ Per Channel Activity Detector with selectable input termination between 50Ω to V_{DD} and > 200KΩ

➔ Per channel output termination detect on power-up with selectable output termination between 100Ω differential and High Impedance

➔ Pin strap and I²C master/slave selectable device programming with external EEPROM

➔ 4-bit selectable address bit for I²C

➔ Hot Plug Detect – allows host to reset if end point is removed (see note 1)

➔ Supply Voltage: 3.3V±10%

➔ Packaging (Pb-free & Green):

  ▫ 56-contact TQFN (11mm x 5mm, 0.5mm pitch) (PI3EQX10964)

Eye Diagram

Before Channel Loss

Before ReDriver

After ReDriver

Host

TX +

RX +

Channel Loss

Long input trace, cable, or connectors

Long output trace, cable, or connectors

Pericom ReDriver

Equalizer, De-emphasis, Swing, and Amplifier Gain

Output trace

Input trace

Device End Point

+ RX

+ TX