

**Product: USB 3.0(Superspeed) ReDriver™**

**Part Numbers: PI3EQX7701, PI3EQX7711**

### Signal Integrity Challenges:

With a 10x performance increase from USB 2.0 to USB 3.0, USB 3.0 is now delivering an impressive data rate of 5.0Gbps. Systems designers are now confronted with new challenges of maintaining eye-pattern signal integrity at the receiver end points to reduce errors and ensure reliability and performance.

### Product Description:

Pericom's PI3EQX77xx is a low power, high performance 5.0Gbps signal ReDriver™ designed specifically for the Superspeed USB3.0 protocol. The device provides programmable equalization, de-emphasis, and input threshold controls to optimize performance over a variety of physical mediums by reducing Inter-symbol Interference (ISI). The PI3EQX77xx supports two 100Ohm differential CML data I/Os between the protocol ASIC to a switch fabric, over cable, or to extend the signals across other distant data pathways on the user's platform. The integrated equalization circuitry provides flexibility with signal integrity of the signal before the ReDriver. A low-level input signal detection and output squelch function is provided for each channel. Each channel operates fully independently. When the channels are enabled and operating, the channels input signal level determines whether the output is active. If the input signal level of the channel falls below the active threshold level, the outputs are then driven to the common mode voltage. The PI3EQX77xx also has many power saving features including an intelligent auto power down feature that selectively puts the device into a low power state on a channel by channel basis. The PI3EQX77xx can also be forced into standby mode at any time by toggling the channel enable pins providing additional flexibility for the user. Lastly, the PI3EQX77xx includes a fully programmable receiver detect function.

### PI3EQX7701

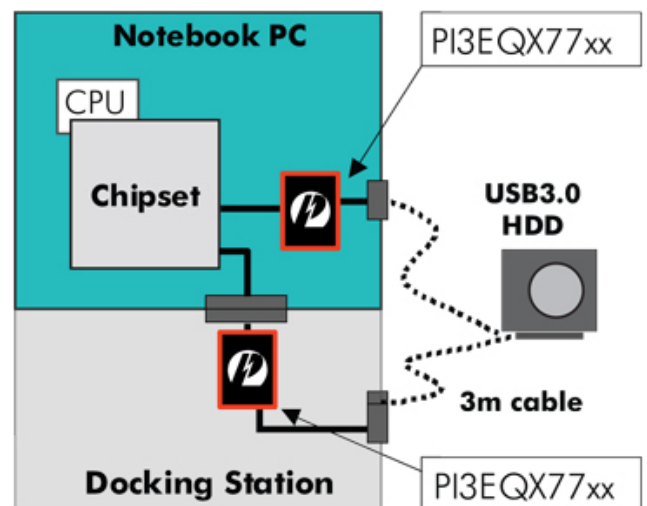
The PI3EQX7701 is a 1-port device with digital adjustment of equalization, emphasis, and threshold. This device provides only values of equalization fixed via pin strapping the device.

### PI3EQX7711

The PI3EQX7711 is also a 1-port device with digital adjustment emphasis, and threshold. However, this device will adaptively adjust the level of equalization applied depending on the length of cable or trace length in the channel.

### Features and Benefits:

- Designed specifically for the USB3.0(Superspeed) protocol
- Two 5Gbps differential signal pairs
- Adjustable Receiver Equalization
- Fully adaptive equalization (Only available on the PI3EQX7711)
- 100Ohm Differential CML I/Os
- Pin Configured Output Emphasis Control
- Input signal level detect and squelch for each channel
- Automatic Receiver Detect with digital enable/disable
- Intelligent Auto Power Down feature – Channel by Channel Auto Power Down
- Low Power (220mW) using 1.2V Supply
- Selectable Single Supply Voltage: 1.2V or 3.3V(Default)
- Packaging: Pb-free & Green
  - 20-Contact TQFN (4x4mm)



Example of a PI3EQX77xx ReDriver in a Notebook PC Application