89HT0816P Retimer Evaluation Board

89KTT0816P kit for 8.0Gbps, 8-lane PCIe 3.0 applications

FEATURES

- Compensates for long PCB trace or cable attenuation and jitter
- 8-lane PCIe adapter card with full PCIe 3.0 protocol support
- Configurable via USB or I²C using IDT Windows GUI tool. JTAG interface also provided
- On-board USB to I²C translation circuit allows for simple connection to a PC or notebook for GUI
- EEPROM supports automatic download of configuration data to the 89HT0816P Retimer
- Enables individual channel configurations of equalization and many operating parameters
- Enables use of the On-Die scope function with Windows GUI tool
- Switches allow control of power-on equalization preset hints
- Multiple power connection options
- Card format: 7.5" x 4.75", non-standard size. Use requires an open chassis
- Works with passive trace cards to extend FR4 traces, also available from IDT (6",12",24")

Benefits

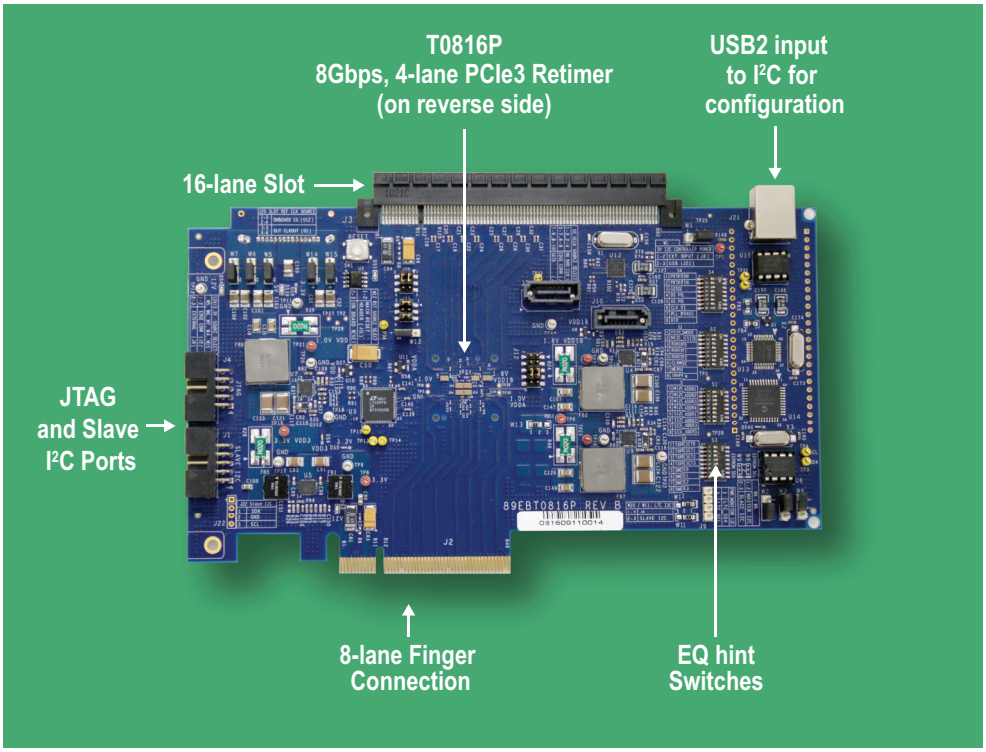
- Quick, convenient evaluation of IDT's 89HT0816P Retimer operation
- Extends trace length by improving voltage and timing margins
- Minimizes BER, improving system performance and reliability
- Can speed design time and reduce risk by eliminating signal integrity issues

Kit Contents

- 1- 89HT0816P 8-lane, 8.0Gbps PCIe 3.0 Retimer Evaluation Board
- 1- CD with Windows GUI software tools and design documentation
- 1- 89HT0816P Evaluation Board User's Guide document
- Order number: 89KTT0816P

System Requirements

- PC or Server with x 8 or x16-lane PCIe slot – with PCIe 3.0 support recommended (but optional)
- Desktop or notebook PC with Windows NT, Win7 or Vista to use IDT configuration GUI and ODS tools
- USB cable to connect PC for GUI tools
- Target add-in cards for system tests

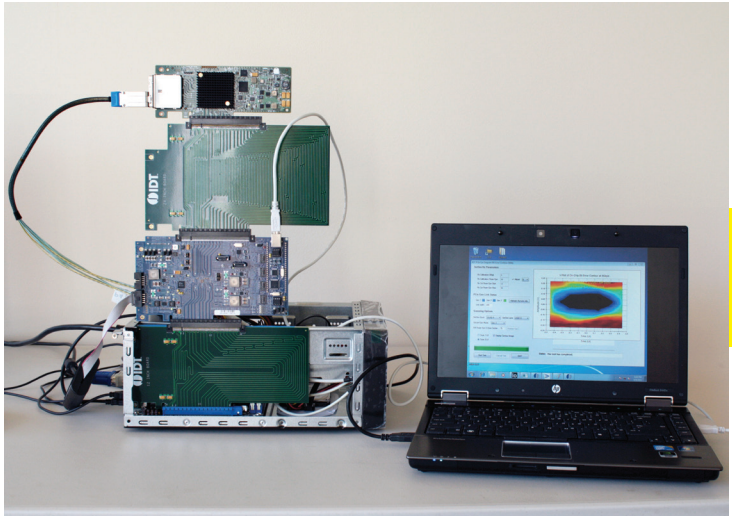


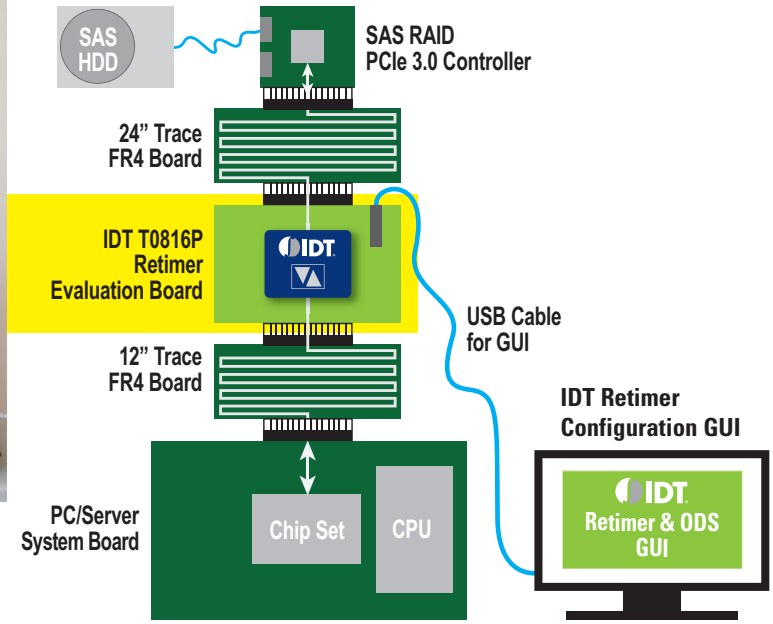
Device Overview

The 89HT0816P Retimer Evaluation Board is designed to enable quick in-system testing of IDT's 8-lane, 8.0Gbps, PCIe 3.0 Retimer IC product.

The Board features an 8-lane connection from host through the retimer to an end-point device installed in the upper PCIe slot. Any width adapter card, from a 1-lane SATA card to a 16-lane graphics accelerator, can be plugged into the top-edge PCIe slot and will train to 8-lanes as active. This Evaluation Board includes a USB to I²C bridge circuit which allows convenient connection to a PC for accessing the Retimer via IDT's Retimer Configuration Utility (GUI). An I²C connection is also provided giving equivalent control capability, but using an external USB to I²C adapter together with IDT's Retimer GUI. Via the GUI, the device receiver, transmitter and many other configuration parameters can be adjusted to provide optimum operating performance.

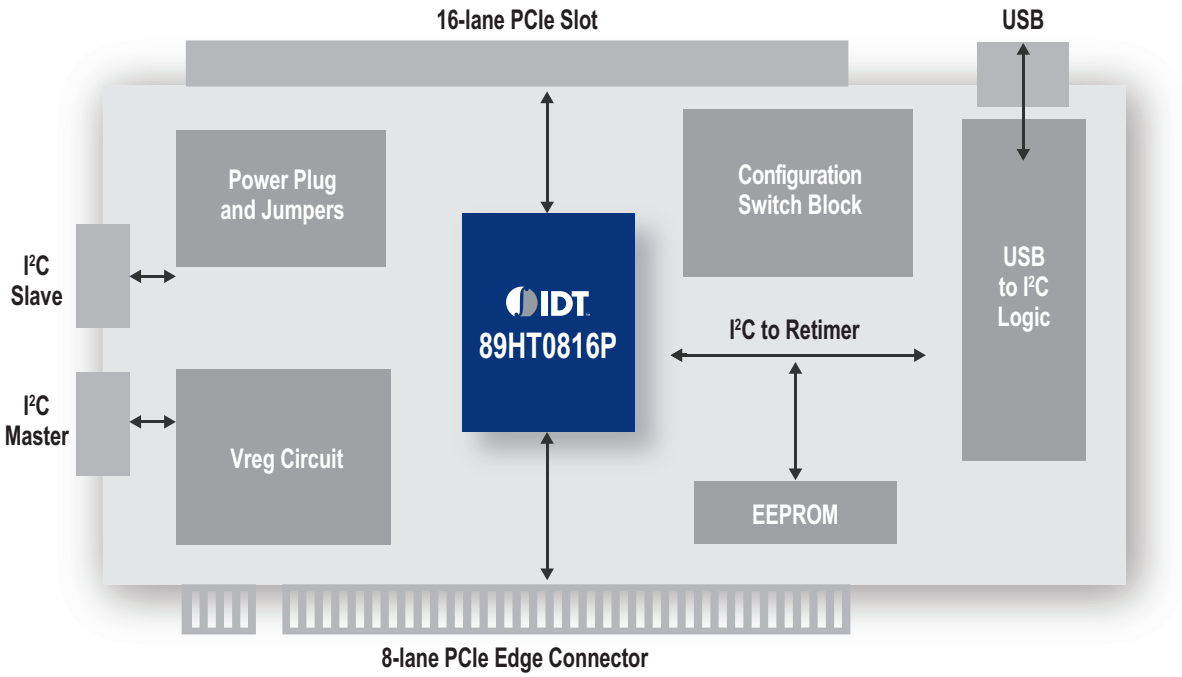
The Evaluation Board is used by inserting it into a desktop PC or server and then plugging an end point card (SATA, Ethernet, USB3, etc.) into the 16-lane slot on top, as shown in the example diagram and photo on the following page. Passive trace cards can be used to extend the data signal to emulate a planned system design. Note that the resulting card stack will require an open chassis test environment. IDT's Technical Applications information can provide configuration for different channel lengths and system architectures.





Example Use

This simple example shows the 89HT0816P Retimer Evaluation Board used to extend 8Gbps signals across a 24-inch passive trace card to a SAS controller and to the host system across another 12-inch passive extender card.



Block Diagram

A block diagram of the 89HT0816P Retimer Evaluation Board is shown above. The board design includes one 4-lane 89HT0816P Retimer supporting an 8-lane link.

Discover what IDT know-how can do for you: **www.IDT.com/go/SIP**

PB_89HT0816P_REVA0612