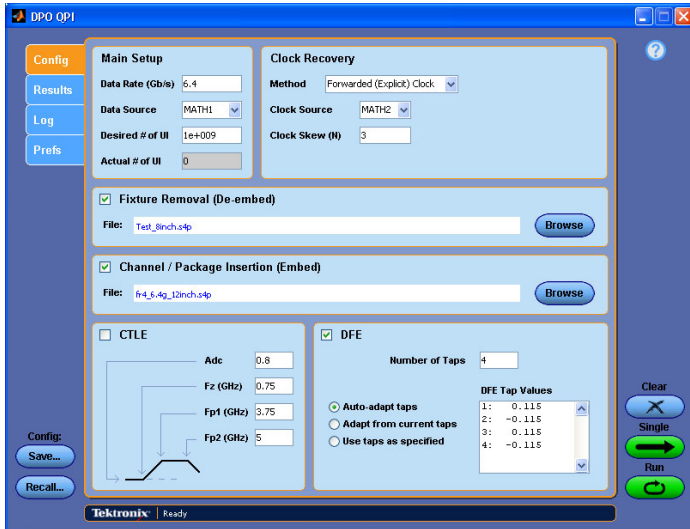


Intel® Quick Path Interconnect Test Automation Software

DPOQPI Data Sheet



Intel® Quick Path Interconnect, sometimes referred to as "QPI", is an Intel-proprietary processor-to-processor interface that will be central to multiprocessor architectures for the next several years. Version 1.0 of QPI, running at 6.4 GB/s, is already common in current-generation commercial products. The next generation of this bus is V1.1. Although target data rates for QPI V1.1 are held as Intel-proprietary, the rates are going up. As a result, complex equalization is expected to be required, system modeling is a must, and advanced analysis of crosstalk effects may be necessary to separate jitter properly and project eye closure accurately.

DPOQPI is a test automation software package that Tektronix has developed working in close partnership with the Intel engineers who own the QPI V1.1 specification and test procedures. The software simplifies user operation by presenting only the features required for PHY testing of the QPI V1.1 bus that may be needed when designing and validating node controllers.

DPOQPI combines certain key capabilities found in SDLA and DPOJET without requiring the user to have familiarity with all of the features of those underlying applications, nor the advanced processing techniques being employed. The user interface is designed to be focused, easy to set up, and simple to use.

Features & Benefits

- Channel Embedding and Fixture De-embedding
- Two Types of Equalizer: CTLE + DFE
- Configurable Clock Recovery
- Eye Diagrams for Performance Visualization
- Histogram Accumulation and Export to an Intel-prescribed CSV File Format
- Automatic Test Termination at a Goal Population
- Remote Programmable Interface

Intel® QPI V1.1 Bus

QPI V1.1 is a point-to-point data communication bus with the following characteristics:

- Multilane architecture
- Unidirectional signaling
- Differential signal pairs (for both clock and data), DC coupled
- Forwarded clock for each link
- System reference clock (shared by Transmitter and Receiver at both ends of the link)
- Transmitter and Receiver equalization
- SSC capability

PHY testing of this bus calls for some familiar measurements that are common to other high-speed serial buses, such as jitter, eye height, eye width, etc. Many of these measurements can be found in the DPOJET application. We have added two new measurements to DPOJET specifically for QPI V1.1, “Eye High” and “Eye Low” which use histograms to record the voltage levels for logic High and Low states.

However, QPI V1.1 PHY testing also requires the ability to embed S-parameters to model the transmit channel, the ability to de-embed test fixture effects, use of CTLE and/or DFE equalization, etc – all of which potentially add to the complexity of configuring the measurement setup. The DPOQPI software combines all of the key capabilities mentioned above – and others – into an application-specific package that provides all the needed functions and controls in one simplified user interface.

The software also features data logging and a remote programmable interface command set, so test operation can be controlled from an external management program and test results can be exported in the desired format.

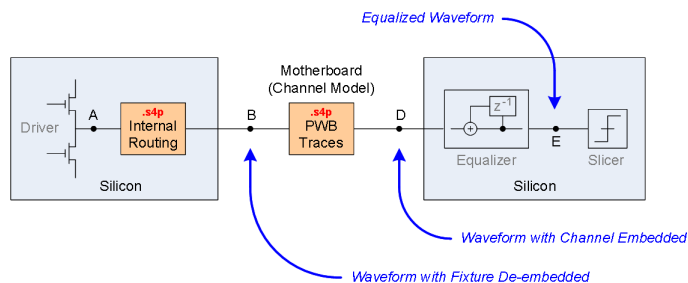


Figure 1 – Test Topology.

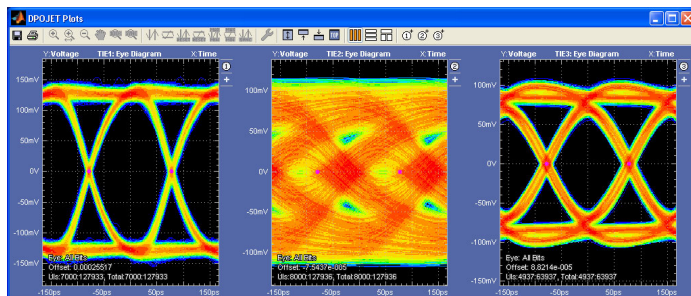


Figure 2 – Eyes at test fixture, end of channel, and post-EQ.

Ordering Information

QPI*1

Intel® Quick Path Interconnect (QPI) PHY Test Automation Software.

Model	New Instrument Orders	Product Upgrades	Floating Licenses
DPO/DSA/MSO70K Series	Opt. QPI	Opt. DPO-UP QPI	Opt. DPOFL-QPI

*1 Requires Option DJA. DJA is standard on DSA70K Series oscilloscopes.

Contact Tektronix:

- ASEAN / Australasia** (65) 6356 3900
- Austria** 00800 2255 4835*
- Balkans, Israel, South Africa and other ISE Countries** +41 52 675 3777
- Belgium** 00800 2255 4835*
- Brazil** +55 (11) 3759 7600
- Canada** 1 800 833 9200
- Central East Europe, Ukraine, and the Baltics** +41 52 675 3777
- Central Europe & Greece** +41 52 675 3777
- Denmark** +45 80 88 1401
- Finland** +41 52 675 3777
- France** 00800 2255 4835*
- Germany** 00800 2255 4835*
- Hong Kong** 400 820 5835
- India** 000 800 650 1835
- Italy** 00800 2255 4835*
- Japan** 81 (3) 6714 3010
- Luxembourg** +41 52 675 3777
- Mexico, Central/South America & Caribbean** (52) 56 04 50 90
- Middle East, Asia, and North Africa** +41 52 675 3777
- The Netherlands** 00800 2255 4835*
- Norway** 800 16098
- People's Republic of China** 400 820 5835
- Poland** +41 52 675 3777
- Portugal** 80 08 12370
- Republic of Korea** 001 800 8255 2835
- Russia & CIS** +7 (495) 7484900
- South Africa** +41 52 675 3777
- Spain** 00800 2255 4835*
- Sweden** 00800 2255 4835*
- Switzerland** 00800 2255 4835*
- Taiwan** 886 (2) 2722 9622
- United Kingdom & Ireland** 00800 2255 4835*
- USA** 1 800 833 9200

* European toll-free number. If not accessible, call: +41 52 675 3777

Updated 25 May 2010

For Further Information. Tektronix maintains a comprehensive, constantly expanding collection of application notes, technical briefs and other resources to help engineers working on the cutting edge of technology. Please visit www.tektronix.com



Copyright © Tektronix, Inc. All rights reserved. Tektronix products are covered by U.S. and foreign patents, issued and pending. Information in this publication supersedes that in all previously published material. Specification and price change privileges reserved. TEKTRONIX and TEK are registered trademarks of Tektronix, Inc. All other trade names referenced are the service marks, trademarks, or registered trademarks of their respective companies.

14 Jan 2011

61W-26441-0

