DDR4 DIMM Slot Compliance Interposer

Flexible Command Timing Compliance Validation

- Cost Optimized visibility
- Passive 284-pin DIMM Slot Interposer
- Address, Command and Control Timing with Command Decode
- Automated Logic Analyzer Setup for fast Time-to-Data
- DDR4 Compliance Analysis S/W (optional)

Overview

Nexus Technology recommends DDR4 slot interposers for applications where the customer must have the greatest flexibility for probing of different DDR4 DIMMs.

This interposer is an extender design and does not require a dedicated DIMM slot. The logic analyzer connects above the standard DIMM height so that there is no mechanical interference with adjacent DIMMs.

This is a passive interposer with no added buffers to conceal system performance.

Performance You Can See™

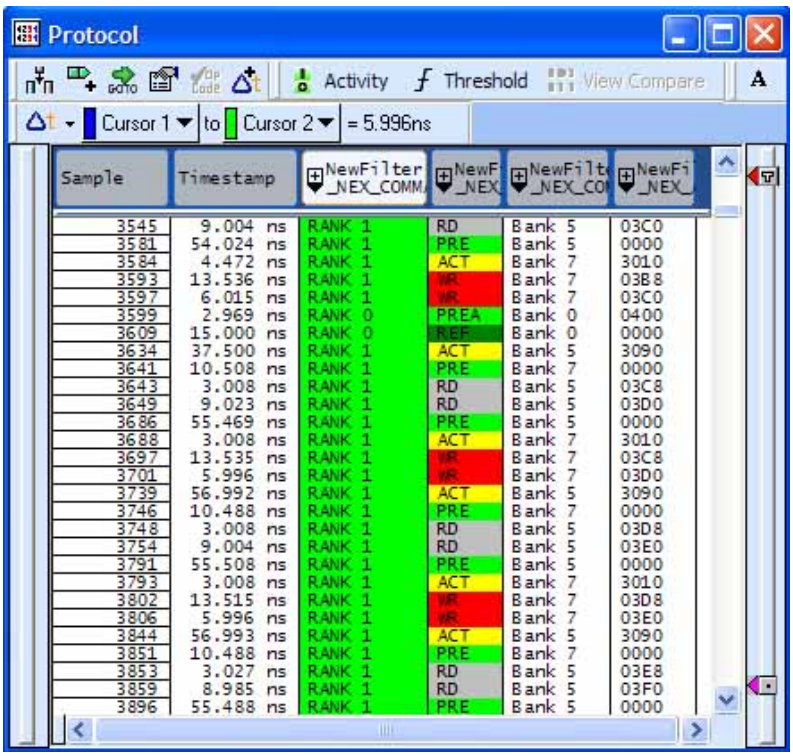

Figure 1 State Display of Command, Address, & Control

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Digital Validation Software

This DDR4 DIMM Slot Compliance Interposer comes with logic analyzer DDR4 setup, acquisition and display software. Compliance analysis software is also available as an option.

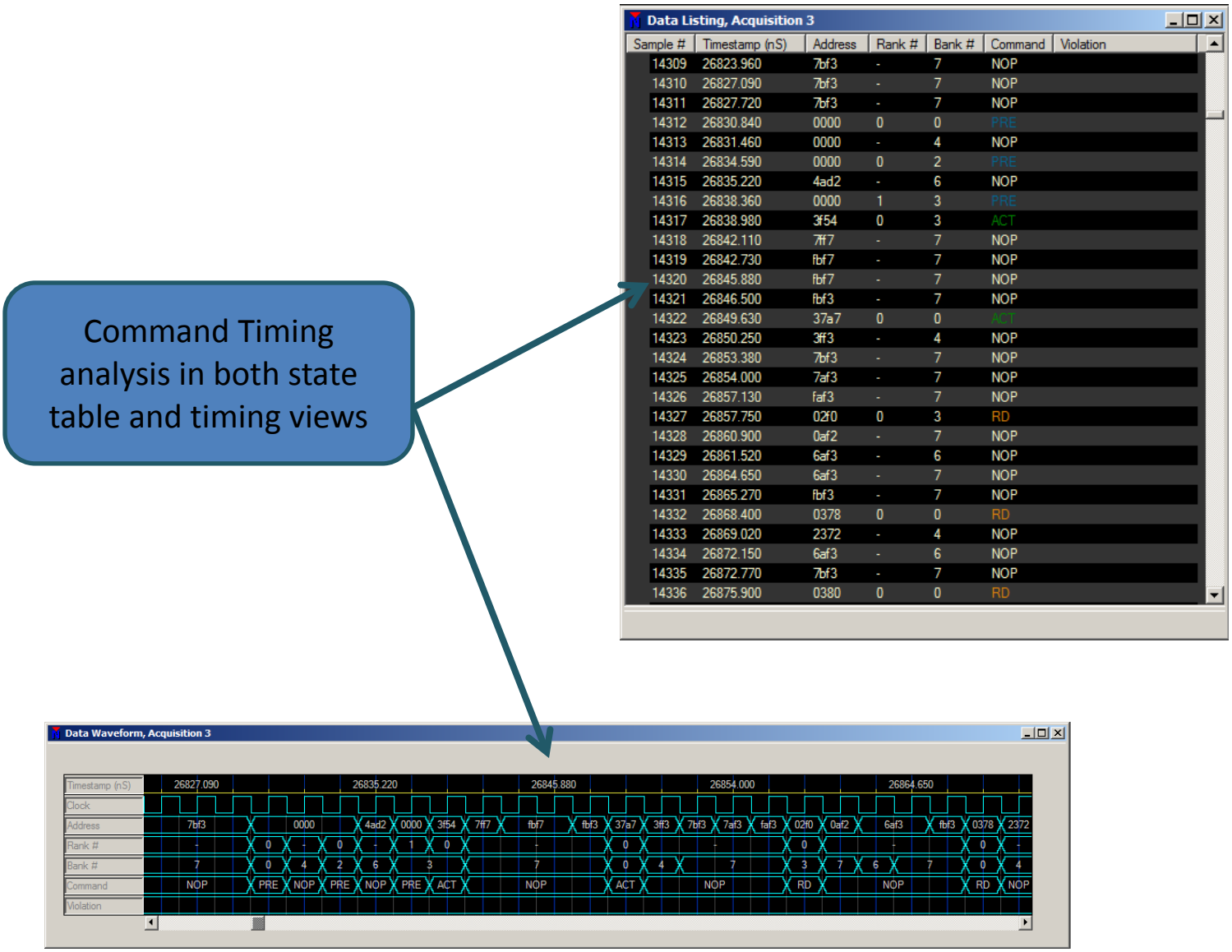


Figure 2 Example of Compliance Analysis S/W

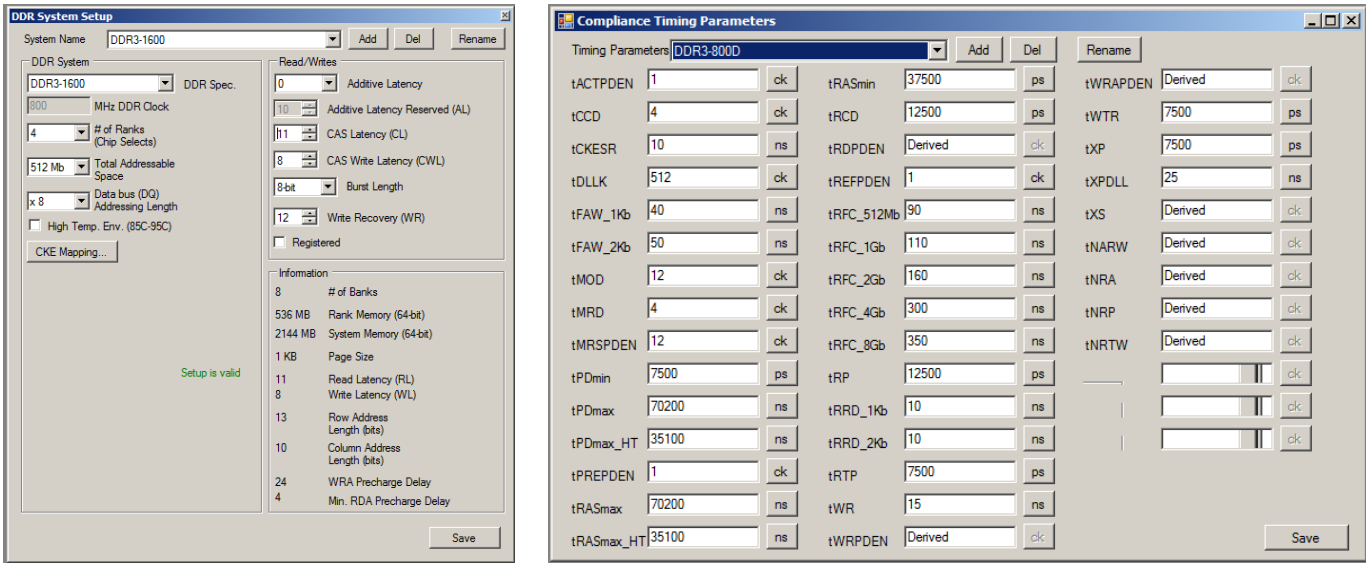
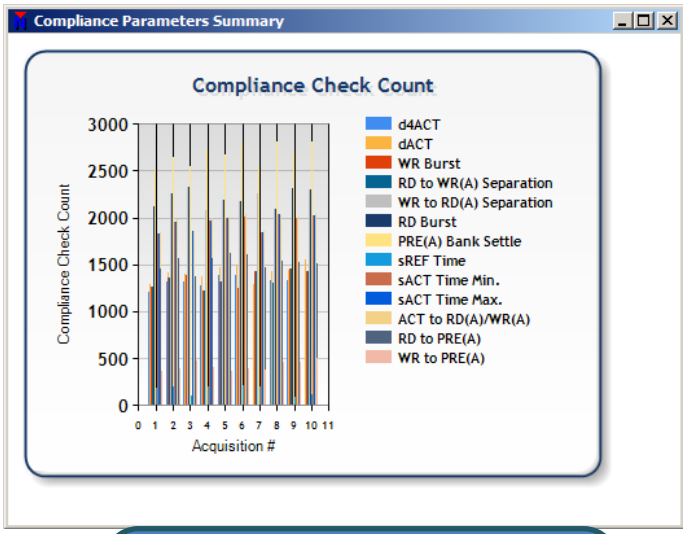
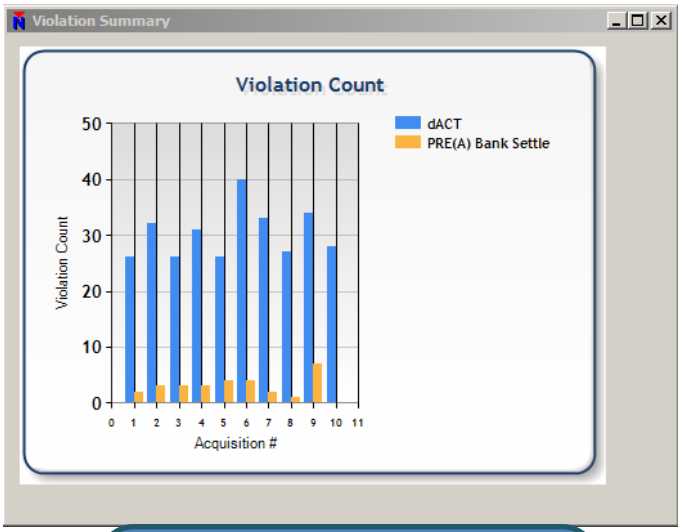


Figure 3 Compliance Analysis S/W Easy Setup



Shows the distribution of commands that were compliance checked



Shows the distribution of commands that violated the spec

Figure 4 Compliance Analysis Graphical Results

Logic Analyzer Setup Software

The logic analyzer setup software (Tektronix refers to these as 'Support Packages') provides a quick setup of the logic analyzer channels and logic analyzer clocking/acquisition parameters. This software also provides disassembly of the DDR4 transactions (Command, Address and Control only) for easy display of the DDR bus cycles and logic analyzer settings for triggers and filters.

Compliance Analysis Software

The optional DDR4 Memory Compliance Analysis package enables and automates measurement of the DDR4 bus activity for fast and easy functional testing and extensive compliance, statistical, and performance analysis.

- Extensive JEDEC DDR4 Compliance Analysis
- Quick and Easy Setup w/No Calibration Required
- Automated Acquisition and Measurement
- Powerful in-application graphical and tabular analysis results
- Memory controller & JEDEC parameters predefined
- Quickly navigate through multiple acquisitions
- Listing and waveform windows with violation analysis built in

	Min.(ps)	Max.(ps)	Average(ps)	Margin(%)	Spec.
R1 R0	NA	NA	NA	NA	959,880
R2 R1 R0	28,007	10,273,985	2,106,353	6.7	26,250
R1 R0	7,441	878,808	123,227	3.3	7,200
R2 R1 R0	NA	NA	NA	NA	5,625
R1 R0	NA	NA	NA	NA	70,200,000
R2 R1 R0	1,855	8,189,726	945,496	-85.9	13,125
R1 R0	114,121	8,169,101	6,001,631	3.7	110,000
R2 R1 R0	42,969	2,839,180	267,945	14.6	37,500
R1 R0	42,969	2,839,180	267,945	-99.9	70,200,000
R2 R1 R0	18,652	116,172	20,254	42.1	13,125
R1 R0	13,066	316,308	170,537	16.1	11,250
R1 R0	NA	NA	NA	NA	20,625
R0	37,383	326,054	162,946	10.8	33,750

Figure 5 Tabular Results Detail of Compliance Analysis

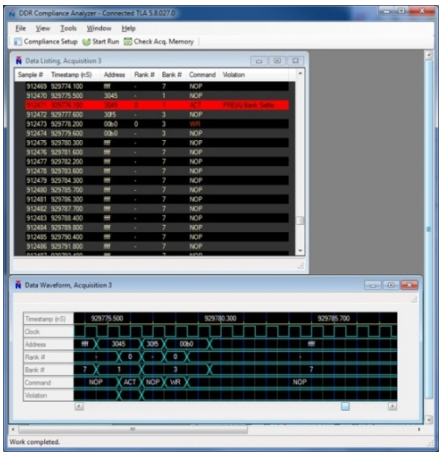


Figure 6 Waveform & Timing Displays of Compliance Analysis

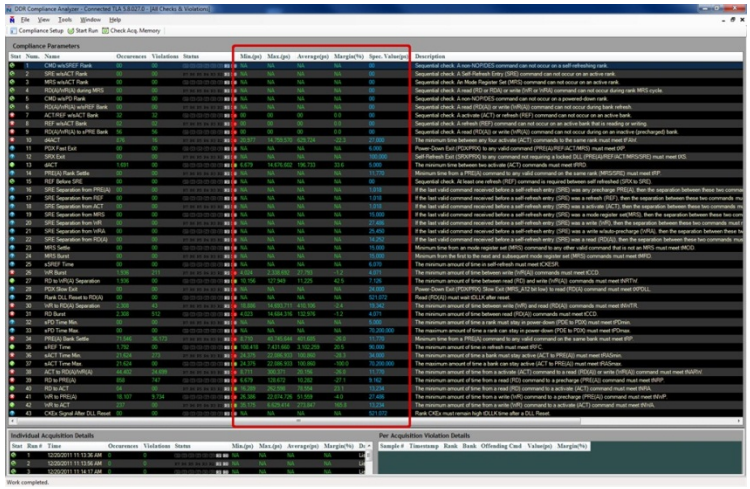


Figure 7 Detailed Compliance Analysis Results

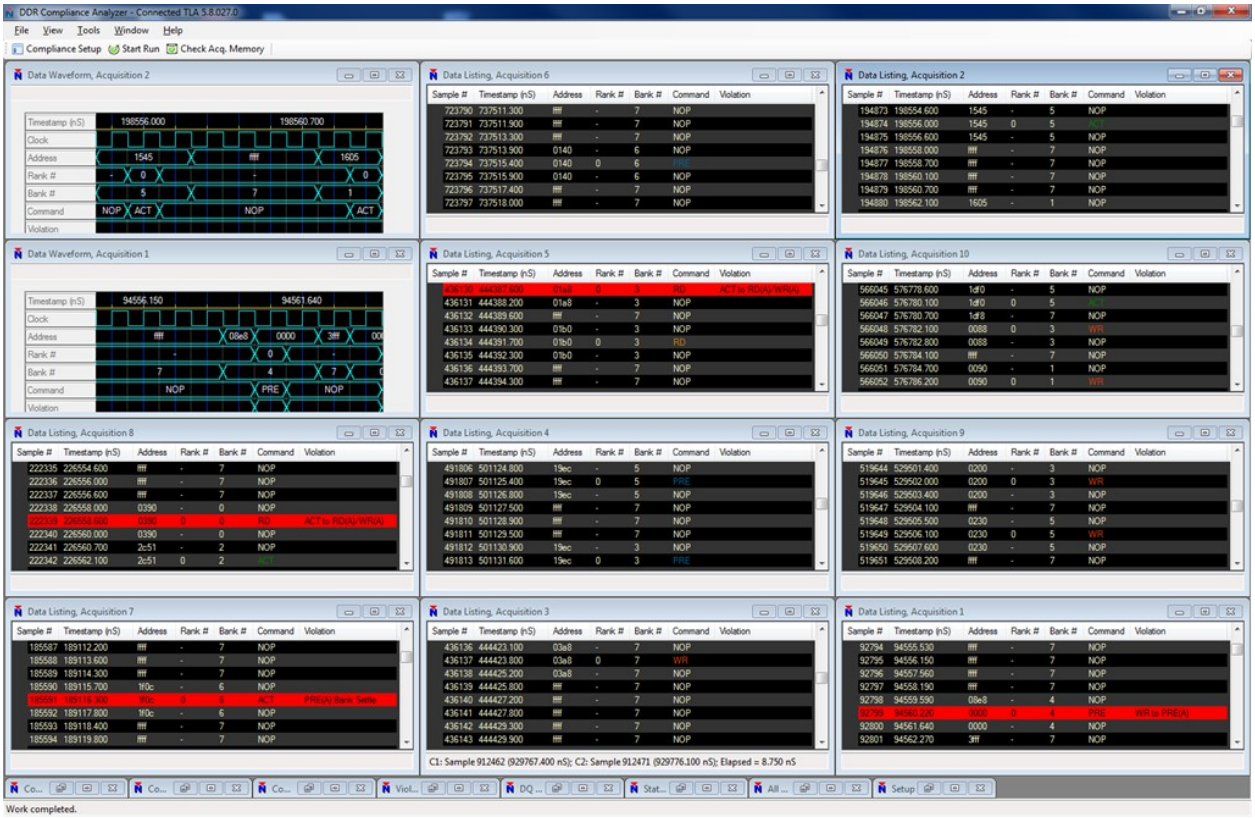


Figure 8 View of Violation in Data Across Many Acquisitions

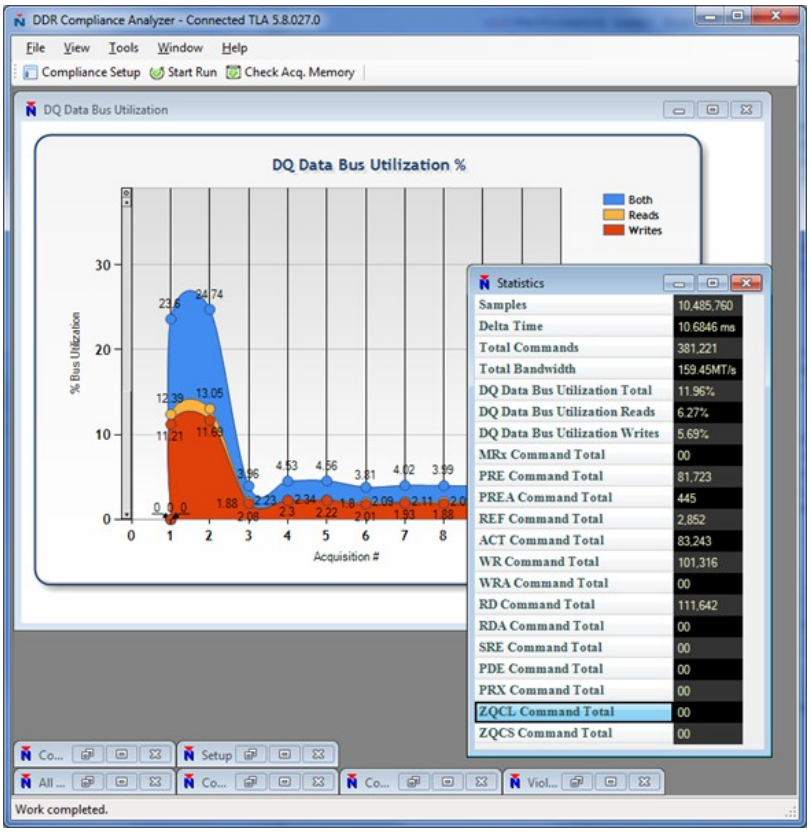


Figure 9 Bus Utilization Measurements

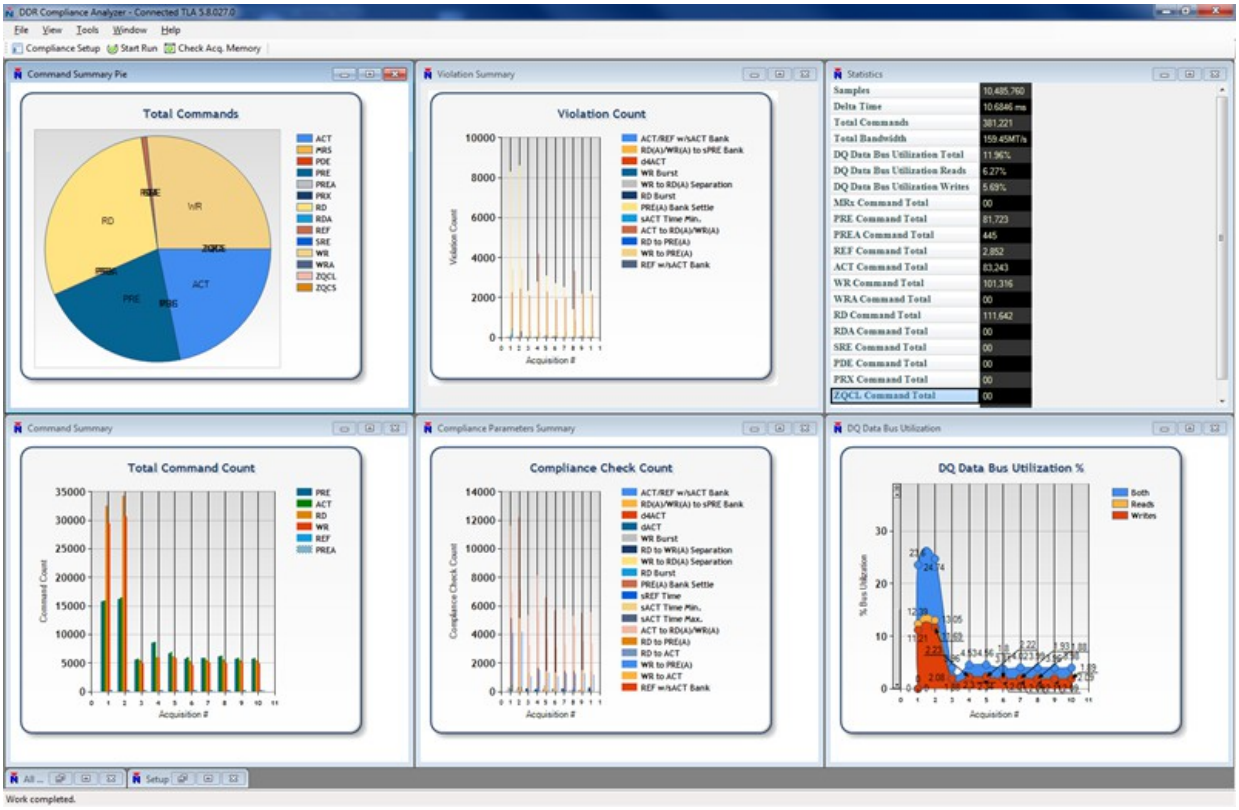


Figure 10 Graphical and Tabular Compliance Analysis Example

DDR4 DIMM Slot Compliance Interposer

NEX-DDR4INTR-CMPL Technical Specification

General

Specification	Detail
Interface Type	Passive Interposer
LA Interface	NEX-PRB1-XL
JEDEC Module Type	DDR4 SDRAM Unbuffered or Registered DIMM

Tektronix Hardware

Specification	Detail	Quantity
Logic Analyzer Mainframe	TLA7000	1
Logic Analyzer Module(s)	TLA7BB2/3/4 (1.4GHz Opt. Required)	1
Logic Analyzer Probes	NEX-PRB1-XL	2 (See note)

Note: A single NEX-PRB1-XL probe will enable the acquisition of all but 4 of the DDR4 control signals

Product Configurations

Nomenclature	Detail
NEX-DDR4INTR-CMPL	1 – DDR4 DIMM Address, Command, Control Interposer 1 – TLA Setup & Decode Software[1]
NEX-MCATLA-DDR4-SWL	1 – DDR4 Compliance Analysis Software License (Optional)

1: Package comes with TLA Support Package, SPA, and iCiS tool.

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Further Information

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