

The Nexus Difference

DDR4 Interposers



- Bus traffic measurement
- Optimization of memory performance
- Analog insight
- DDR4 rates above DDR4-3200

Overview

Double-data rate fourth-generation (DDR4) main memory technologies are developed by the Joint Electronic Devices Engineering Council (JEDEC) for use in servers, workstations, and high-performance portable applications that require deep memory.

No matter where you are in your product development cycle we have you covered! Complete analysis and validation of your product design, power-on, debug, compliance and optimization.

- Electrical Analysis - Early simulation, power on analog debug and analysis
- Logic Analysis - State/Cycle analysis viewing multiple signals as Commands and Data
- Compliance Analysis - Real Time bus protocol and performance analysis compared to JEDEC standards. System Optimization

Key Features

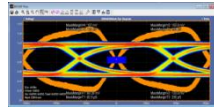
- High fidelity interposers for DDR4
- Data rates exceeding 3,200MT/s
- Enables oscilloscope or logic/memory analyzer probing
- Patented interposer/probe designs

Applications

- DDR4
 - Memory validation and debug
 - Monitoring bus traffic

Interposer Types - Electrical Analysis

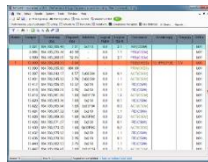
Electrical analysis is enabled by using either an EdgeProbe™, high density, or socketed interposer to capture memory activity on an oscilloscope. The oscilloscope is then used to debug, analyze, and verify the analog characteristics of your design. Presenting an accurate representation of the signals under test to the oscilloscope is critical. Nexus interposers provide an unobtrusive interconnect and accurate signal to your oscilloscope.



not fit in all applications. EdgeProbe™ interposers fit in all applications.

EdgeProbe™ interposers provide advanced analysis capabilities by integrating the oscilloscope probe in to the interposer itself. In doing so, the probe point moves extremely close to the component pad which is the optimal and least intrusive location.

Interposer Types - Logic/Compliance Analysis

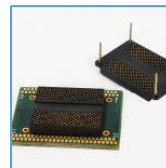


Logic analysis is performed using a logic / compliance interposer to capture memory activity on a logic or memory

analyzer. The logic or memory analyzer is then used to debug, analyze, and verify the logic (basic protocol) of your design. Compliance analysis uses the same interposers to capture activity on a memory analyzer. The memory analyzer is then used to debug, analyze, margin test, performance analyze, and verify the memory protocol.

Socketed Interposer Technology

Socketed interposer consists of a target socket, an interposer, and - optionally - a component socket. The target socket has a



standard ball-grid-array (BGA) interface which is used to install the socket on to the target. The target socket has a removable

socket interface to which the interposer can be mechanically attached and re-attached by using a simple tool and your finger to press-fit the parts together.

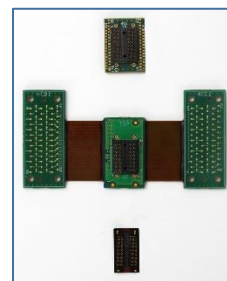
The target socket's design forces the interposer up and over adjacent components, allowing this solution to fit in a wide variety of mechanically tight applications.

EdgeProbe™ Interposer Technology



Nexus Technology's patent pending EdgeProbe™ technology enables our interposers to be virtually the same size as the memory

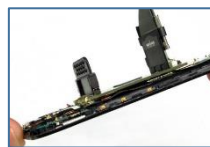
component. This is important because standard direct-attach interposers are significantly larger than the memory component which can potentially cause mechanical clearance problems. In other words, standard direct-attach interposers do



If an optional component socket is provided, this socket will reside on the interposer and provide a mechanically constrained and reusable interface for attaching standard BGA components. If the optional component socket is not provided, the standard BGA component is attached to the interposer using standard BGA component attachment

techniques. Lastly, when testing is completed, the interposer can be removed and the BGA component may be press fit directly the custom socket on the target essentially removing the effect of the interposer in the target.

Attachment Service



Nexus Technology's expert attachment service provides a ready-to-go test solution customized

to your application. We will attach the interposer and any additional accessories to your application's target. We can also power-on and test your application to confirm functionality.

DDR4 Interposer Packages / Modules

DDR4 main memory is available in standard Ball-Grid-Array (BGA) component packages as well as dual-inline-memory-modules of DIMM and SODIMM. Standard BGA packages are soldered directly to the printed circuit board (PCB) while modules comprise a series of packages in a standard PCB format with standard connections between the DIMM and the main board. Interposers are available for both component packages and DIMM and SODIMM modules.

DIMM Interposer Matrix

Module Type	Interposers			
	Logic Compliance			MSO
	CMD	CMD/DATA	CMD/DATA Probe Integrated	CMD/DATA
284-Pin DIMM	✓	✓	✓	✓
288-Pin DIMM	✓	✓	✓	✓
256-Pin SODIMM	✓	✓	*	✓
260-Pin SODIMM	✓	✓	*	✓

Component Interposer Matrix

Package	Interposers			Options	
	Oscilloscope		Logic Compliance	Riser	Component Socket
EdgeProbe™	Socketed	Socketed			
78-Ball x4/x8	✓	✓	✓	Yes	Yes
96-Ball x16	✓	✓	✓	Yes	Yes
144-Ball x32	✓	*	*	No	Yes
Custom	Custom designs are also available. Please contact us.				

* If you don't see what you need, please contact us for the most up to date information.

For more information on an interposer, please see the interposer datasheet.

Product List

Product	Nomenclature	More Information
DDR4 78 Ball EdgeProbe™ Interposers	NEX-DDR4MCI78SCDx	See Product Datasheet
DDR4 96 Ball EdgeProbe™ Interposers	NEX-DDR4MCI96SCDx	See Product Datasheet
DDR4 144 Ball EdgeProbe™ Interposers	NEX-DDR4MCI144SCDx	See Product Datasheet
DDR4 78 Ball Socketed Interposer for Oscilloscopes	NEX-DDR4MP78BSC	See Product Datasheet
DDR4 96 Ball Socketed Interposer for Oscilloscopes	NEX-DDR4MP96BSC	See Product Datasheet
DDR4 144 Ball Socketed Interposer for Oscilloscopes	NEX-DDR4MP144BSC	Contact Us
DDR4 78 Ball Socketed Interposer for Logic Compliance	NEX-DDR4MP78BLAx	See Product Datasheet
DDR4 96 Ball Socketed Interposer for Logic Compliance	NEX-DDR4MP96BLAx	See Product Datasheet
DDR4 144 Ball Socketed Interposer for Logic Compliance	NEX-DDR4MP144BLAx	Contact Us

Contact Information

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