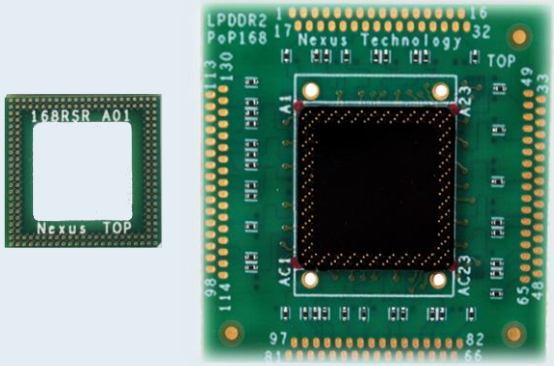
NEXUS TECHNOLOGY

The Nexus Difference

168 Ball LPDDR2 PoP Interposer Oscilloscope Component Interposer

- Optimal Analog Validation
- Use with Existing Embedded / Mobile Designs
- For Speeds of LPDDR2-1067+
- Scope Probe Tips Designed into the Interposer
- Socket Design – also available without a socket
- Support for LPDDR2 Memory Devices
  - Package on Package (PoP)
  - 12mm X 12mm
  - x32 Data Width
  - 0.5mm Pitch
  - Easy to Install
- S Parameters available for Simulation and Scope Filter Creation



This Memory Component Interposer (MCI) BGA adapter has been designed to provide a high fidelity, easy to probe adapter that connects between your target Board and your memory component. Memory Component Interposers compliment the oscilloscope adapters providing a complete debug solution.

Figure 1 - Side view (photo) of PoP memory soldered onto a processor

The Pop Challenge

Low Power DDR2 (LPDDR2) memory components are expanding rapidly in the market providing low power, high bandwidth, high density memory solutions. The Package on Package version results in target space saving but introduces significant roadblocks for test/debug and analysis of the memory interface.

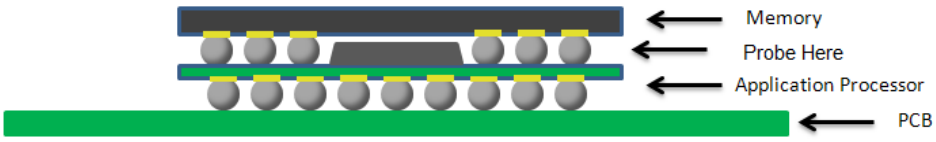


Figure 2 - Side view (Drawing) of the PoP memory soldered onto a processor

Tracker: LPDDR2-168-SCMCI-DS-XXX
Document Version: 1.05

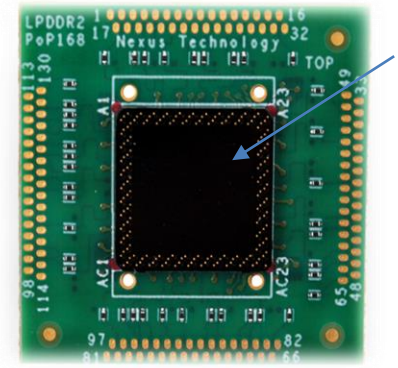
LPDDR2 Memory Socket Component Option

Interposers are available without the memory socket on them. If the product is ordered this way, it is the customer's responsibility to mount the memory IC onto the Interposer. Ordering with a memory socket allows for easy BGA memory component installation and removal for the quick swapping and testing of different memory components on the interposer.

The two types of Socketed Memory Components:

NEX-LPDDR2PoP168SC – LPDDR2 PoP 168 ball MCI. No memory socket installed on MCI (solder balls only on bottom of interposer). Includes one riser. Note: riser ships without solderballs.

NEX-LPDDR2PoP168SCSK – LPDDR2 PoP 168 ball with memory socket installed on MCI (solder balls only on bottom of interposer). Includes one riser. Riser ships without solderballs attached.



Memory Socket installed. A socket on the interposer provides the ability to quickly and easily change memory components in a target. Simply remove and insert different memory components to validate multiple memory vendors devices.

If purchased without a memory socket (NEX-LPDDR2PoP136SC), memory will need to be soldered directly to interposer.

Figure 3 - Memory Socket installed on Interposer

Memory Component Interposer Installation

Assemble the Memory Component Interposer onto the riser as shown in Figure 3 (Riser is optional). Care should be taken to ensure that the balls on the adapter align correctly with the riser on the target. Pin 1A needs to be matched to 1A on the user's board under test (Target).

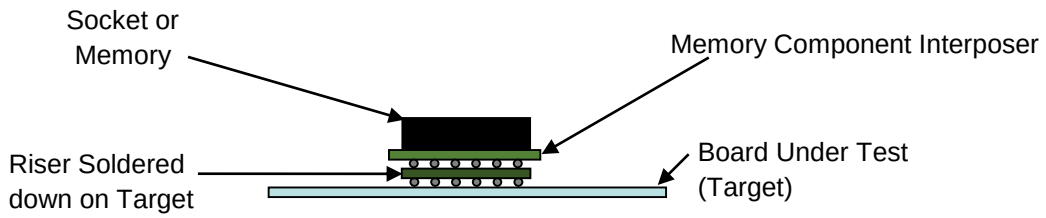


Figure 4 - Side view of the complete interposer installation

Oscilloscope Component Interposer Hardware

Connection to an oscilloscope is enabled by using oscilloscope memory component interposers. These controlled impedance; matched trace length interposers provide analog visibility using an oscilloscope. Signals are brought out to probe points that are designed to accommodate solder down probe tips. For more information, please see the Nexus Soldering Guide. Removable oscilloscope probe tips can also be used to easily move the oscilloscope probe between signals for quick and accurate measurement.

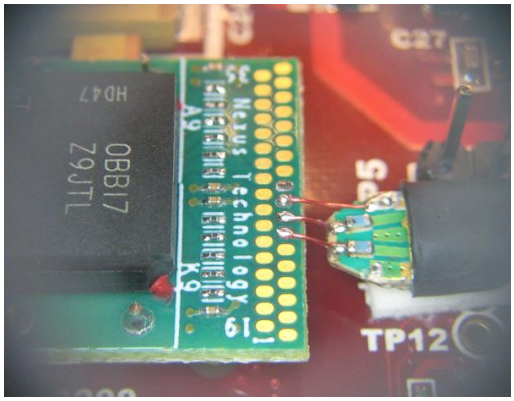


Figure 5 - Soldered down probe tips

Oscilloscope Analog Validation

Filter software available for your oscilloscope removes the effect of the oscilloscope interposer. Although these interposers are designed to optimize signal integrity, this feature removes even the slightest effect the adapter has from the oscilloscope display.

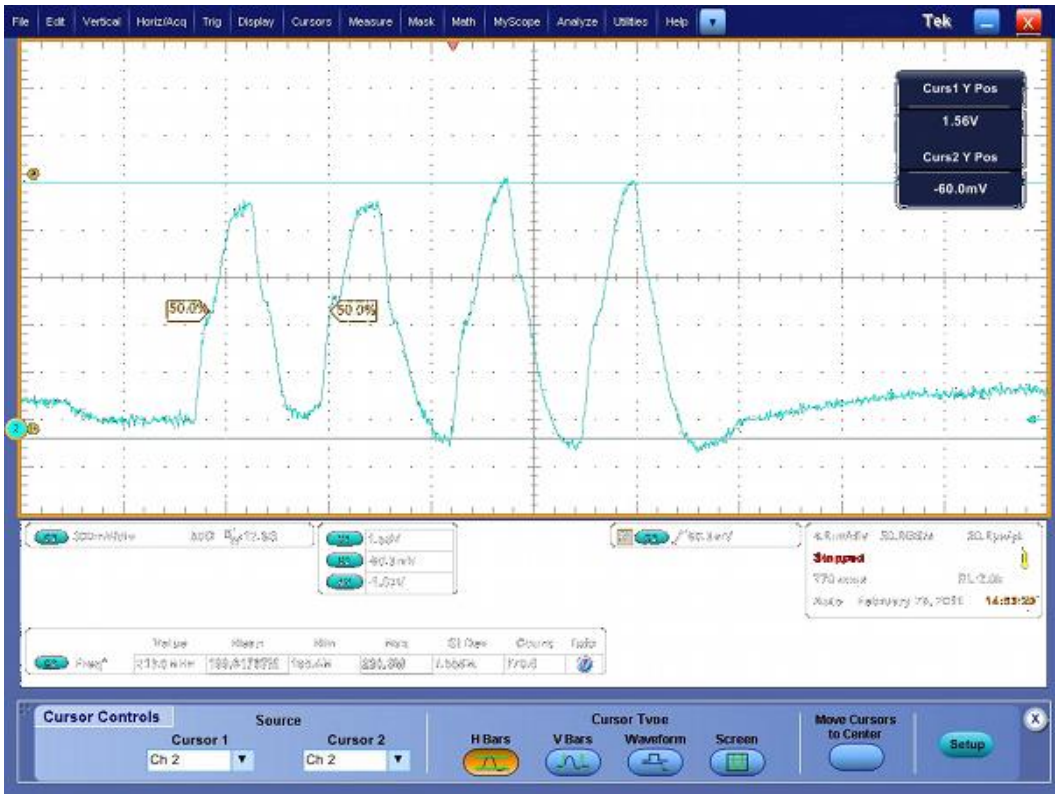


Figure 6: Strobe as seen using the Oscilloscope Component Interposer

Nexus Technology's Component Interposer Advantages

Probed at the BGA Pads

The best place to probe to eliminate reflections associated with standard embedded LPDDR2 mid bus probing or other methods is at the BGA pads. Interposers require no target footprints or special routing requirements that mid bus probing requires.

Use with Existing Embedded Designs

No need to change existing designs. Simply add the interposer to your embedded target with no re-design or added probe points.

Easy to Install

Just install the interposer and riser by using industry standard BGA attachment methods or by utilizing Nexus Technology's attachment service.

Oscilloscope Interposer software

Oscilloscope de-embedding filter software removes the effects of an interposer on the system. Please contact Nexus for more information.

Interposer Riser for the Target

An optional riser can be used to connect the SoC to the interposer. The mechanical dimensions for Riser is shown in Figure 6.

Product Dimensions

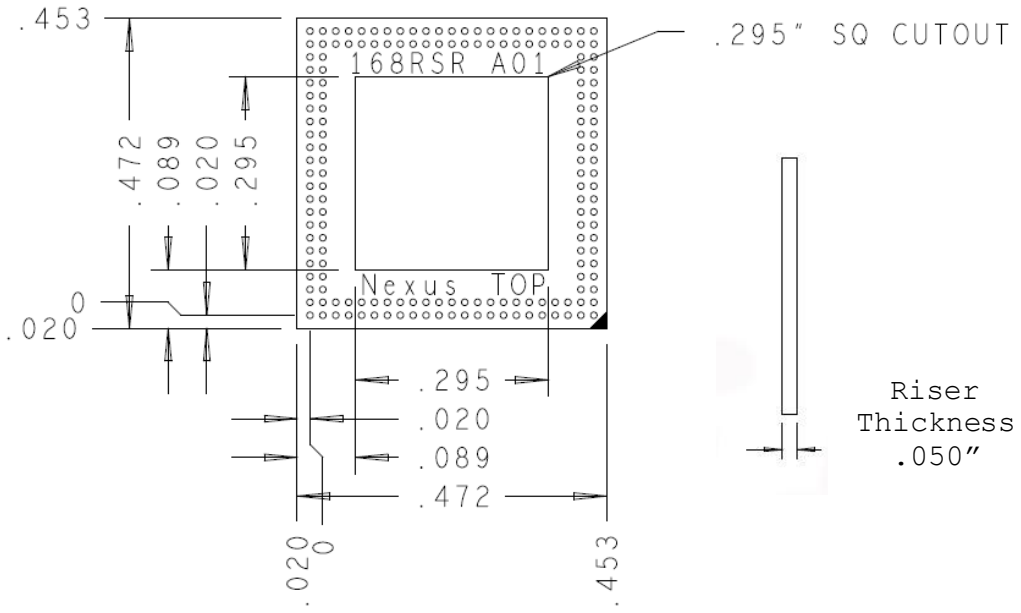


Figure 7: LPDDR2-168 ball Riser Dimensions

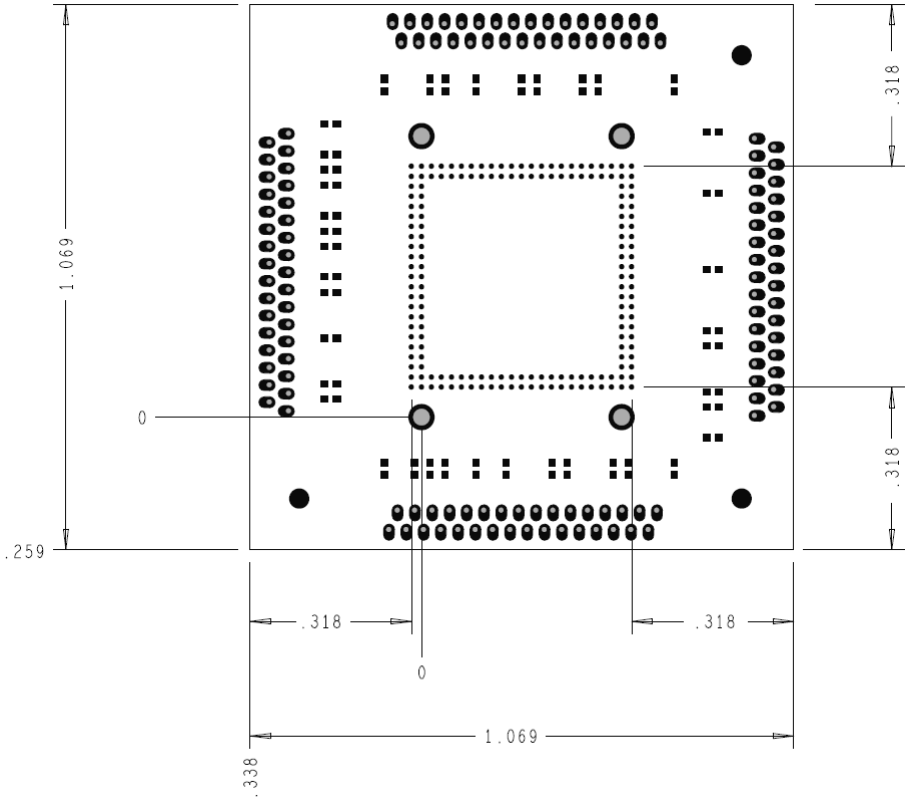


Figure 8: LPDDR2 168-Ball PoP Oscilloscope Component Interposer Dimensions

Product Configuration Tables

LPDDR2 PoP 168-ball Oscilloscope Interposers

Nomenclature	Description	Interposer Type	Data Width	Memory Socket Included
NEX-LPDDR2PoP168SC	LPDDR2 PoP 168 ball MCI. No memory socket installed on MCI (solder balls only on bottom of interposer). Includes one riser. Note: Riser ships without solderballs.	Oscilloscope	x32	No
NEX-LPDDR2PoP168SCSK	LPDDR2 PoP 168 ball with memory socket installed on MCI (solder balls only on bottom of interposer). Includes one riser. Riser ships without solderballs attached.	Oscilloscope	x32	Yes

Optional Add On Accessories

Nomenclature	Description	Solderballs Included
NEX-RSRLPDDR2168	Qty 1: LPDDR2 168 ball riser	No
NEX-OPT-SOLDERBALLS-RSR	Qty 1: add solderballs to riser	Option
Attachment Service	Nexus provides an optional service for the removal of a memory component from the target under test and the re-balling of the removed memory component as well as the attachment of the riser and interposer onto the user supplied target under test. This attachment is similar to soldering a BGA component onto a Board.	

Further Information

Please contact us by telephone, email or mail as listed below. Normal business hours are 9:00 – 5:00 EST.

Web www.nexustechnology.com
Telephone 877.595.8116
International 603.329.3083
Fax 877.595.8118
Address 78 Northeastern Blvd. Unit 2 Nashua, NH 03062
Email support@nexustechnology.com

NEXUS TECHNOLOGY

Tektronix Embedded Systems Tools Partner

Tracker: LPDDR2-168-SCMCI-DS-XXX
Document Version: 1.05