

LPDDR3 PoP Oscilloscope Component Interposer

216 Ball Package on Package Memory Device Support

- Optimal Analog Validation
- Use with Existing Embedded / Mobile designs
- Scope probe tips designed into the interposer
- Socket Design – also available without a socket
- Support for LPDDR3 Memory devices
 - Package on Package (PoP)
 - 12mm X 12mm
 - 2x32 data width
 - 0.4 mm pitch
- Easy to install
- Oscilloscope de-embedding filter available



The Pop Challenge

Low Power DDR3 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 1: Side view (photo) of PoP memory soldered on to a processor

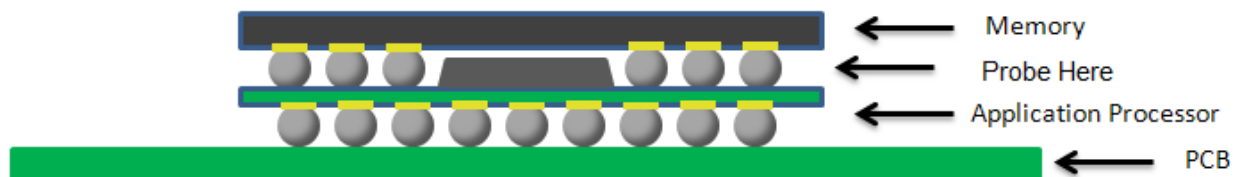


Figure 2: Side view (Drawing) of the PoP memory soldered onto a processor

Premier Target Socketed Component Interposer Design

Optimal LPDDR3 validation requires analysis of the LPDDR3 signals, as seen by the memory components. This allows for the highest confidence that the signal captures are representative of the signals on the target. Nexus Technology component interposers allow for oscilloscope probing of the LPDDR3 signals extremely close to the memory components BGA solder balls.

Memory Component Interposer Installation

The process of attaching the interposer to your target has been greatly simplified using Nexus Technology's patented, high-bandwidth, component interposer sockets. These patented sockets remove the need to contract specialized rework houses to perform the installation. Instead, you can use standard BGA assembly practices to install the component interposer socket. Nexus Technology can perform the attachment service for a nominal fee.

Once the interposer socket is installed on the target, logic analyzer or oscilloscope interposers can be easily inserted or removed from the socket. Note that the interposer socket elevates the interposer above the adjacent components to provide the mechanical clearance necessary for easy probe attachment.

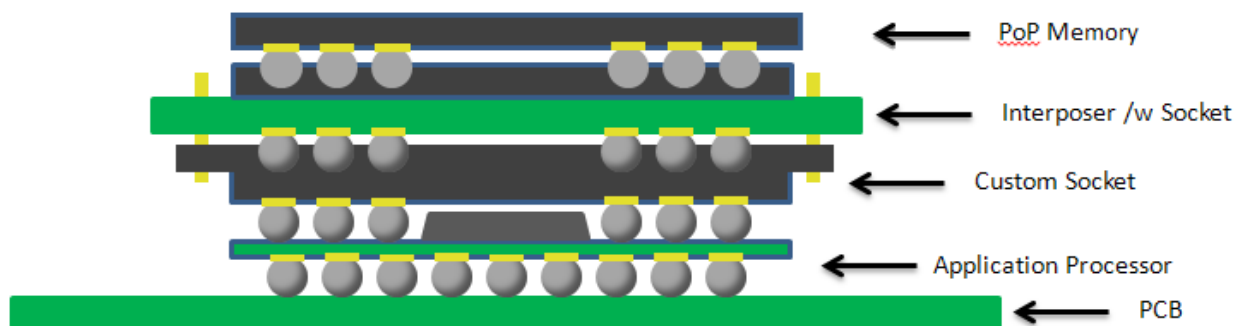


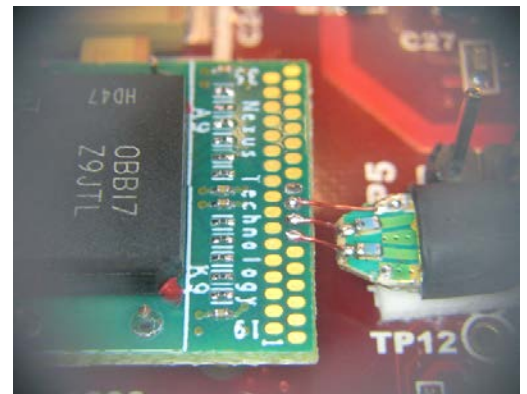
Figure 2: Side view of the complete interposer installation

LPDDR3 BGA Component Installation

The interposer can be ordered with a second socket for easy BGA memory component installation and removal. These sockets allow for the quick swapping and testing of different memory components on the interposer.

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. All 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.



Oscilloscope Analog Validation

Filter software, available from Tektronix for use with select Tektronix oscilloscopes, 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.

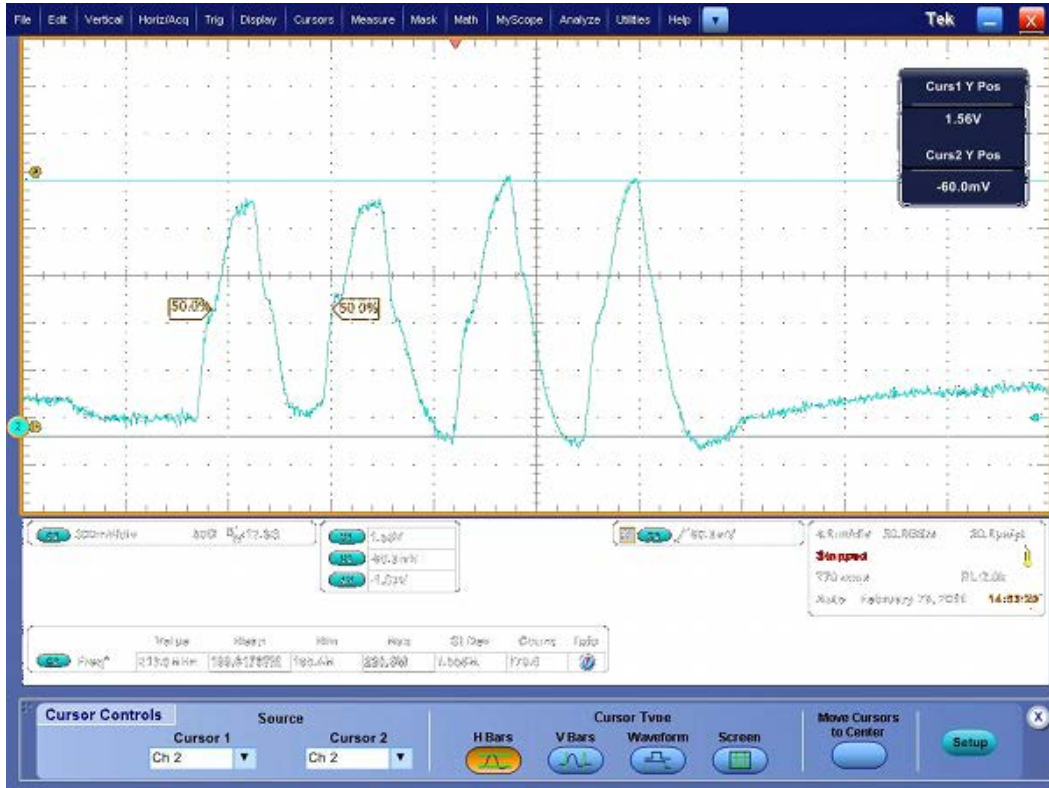


Figure 3: Strobe as seen using the Oscilloscope Component Interposer

Nexus Technology's Component Interposer Advantages

Probed at the BGA Pads

The best place to probe to eliminate reflections associated with standard embedded LPDDR3 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.

Socket Design

The interposers are reusable. Once an interposer socket is installed, the interposer can be attached and removed by hand - allowing the interposer to be used on multiple targets quickly or allowing quick swapping of logic analyzer and oscilloscope interposers on the same target.

Easy to Install

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

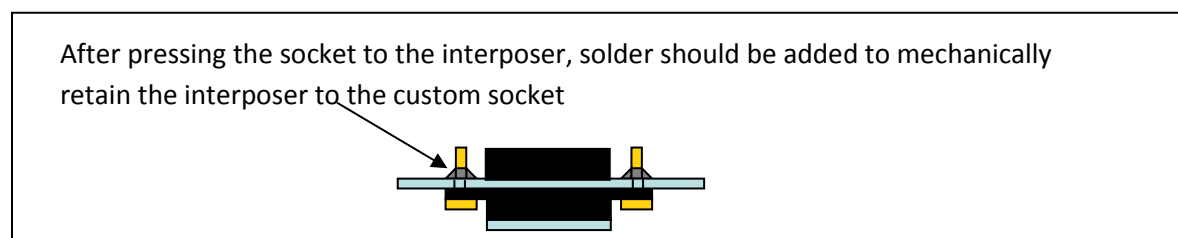
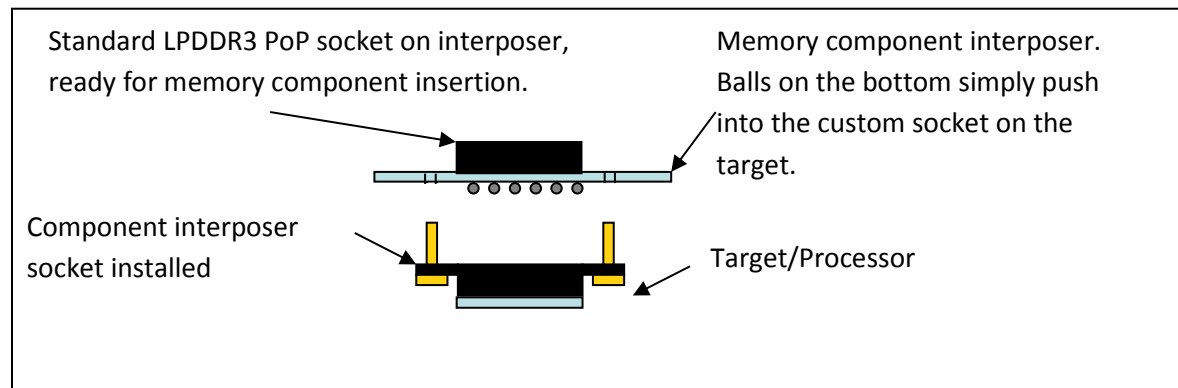
Oscilloscope Interposer software

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

Interposer Retention to the Target

The interposer socket has four posts that are tack-soldered to four mounting holes on the interposer. This ensures that the interposer will not be mistakenly pulled off of the target.

Attaching & Reusing Interposers



Product Dimensions

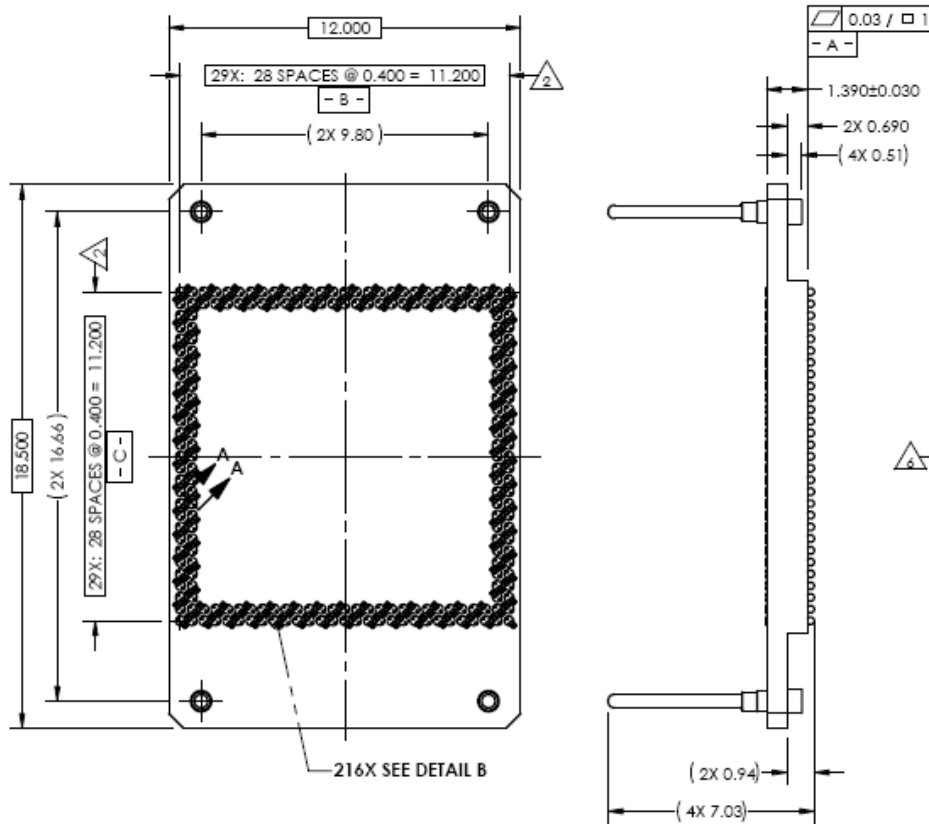


Figure 4: LPDDR3-216 ball PoP Target Socket Dimensions

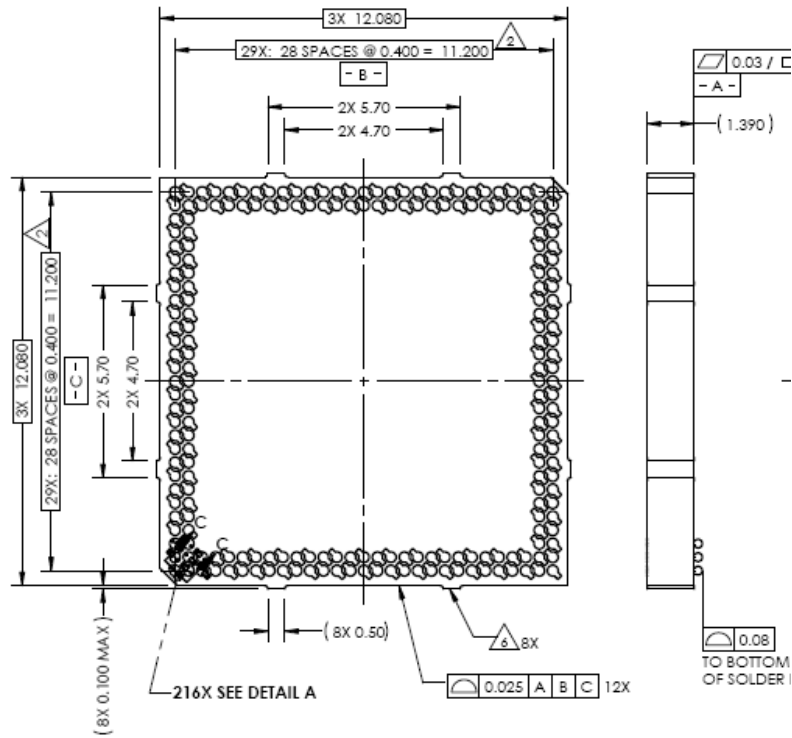


Figure 5: LPDDR3-216 ball PoP Memory Component Socket Dimensions

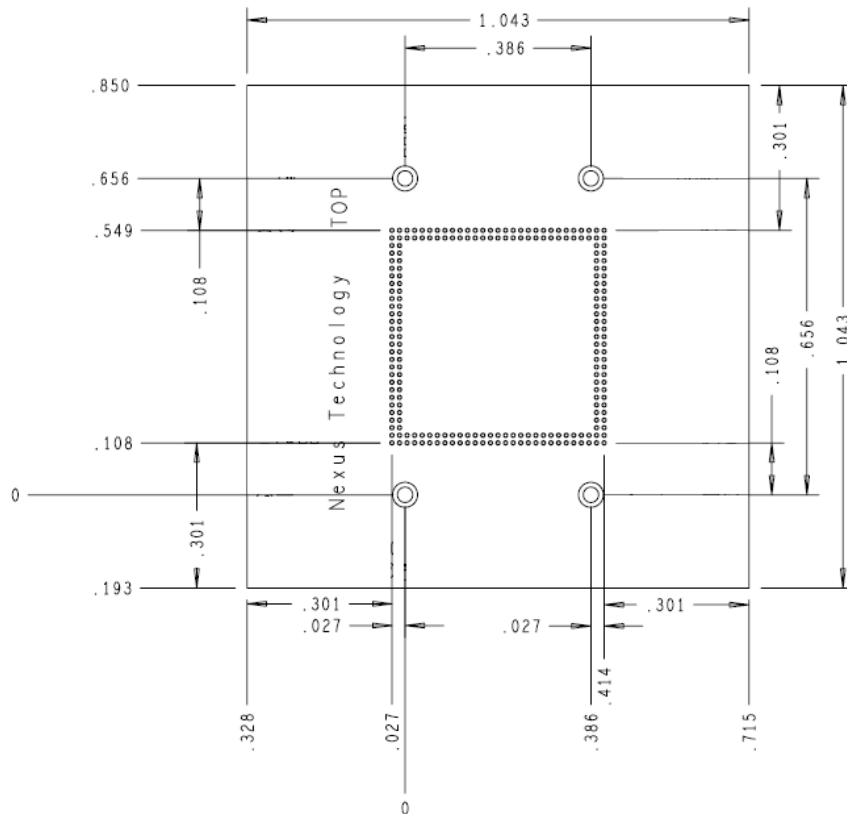


Figure 6: LPDDR3 216-Ball PoP Oscilloscope Component Interposer Dimensions

Product Configuration Tables

LPDDR3 PoP 216-ball Oscilloscope Interposers

Nomenclature	Interposer Type	Data Width	Component Sockets Included	Installation Service Included
NEX-LPDDR3PoP216SC	Oscilloscope	2x32	No	No
NEX-LPDDR3PoP216SCSK	Oscilloscope	2x32	Yes	No
NEX-LPDDR3PoP216SCSK-AT	Oscilloscope	2x32	Yes	Yes

Optional Additional LPDDR3 PoP 216 Ball Component Interposer Sockets

Nomenclature	Solder Balls Added	Quantity of Sockets
NEX-LP3-216BGASKBA	Yes	1
NEX-LP3-216BGASKBA-3	Yes	3

Further Information

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

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