



Obsolescence Solutions

Interposers & Adaptors





Interposers & Adaptors

- Customer's problems:
 - ❖ The IC used in our legacy product has gone obsolete. A new IC is available but with a different package footprint and/or different features.
 - ❖ The fine pitch features of the BGA I want to use are driving up the complexity and cost of my entire board.
 - ❖ I need to add more features onto a legacy product, but I cannot re-design the board.



Frequently Asked Questions

- **Question:** *How can I keep using the same IC function with the new package?*
- **Answer:** By developing a customized adapter or interposer board to “translate” the circuit functions from one or more IC’s, to the legacy application and package footprint. In addition, this allows the customer to add features & functions not contained in the original design by incorporating them onto the new adapter or interposer board.
- **Question:** *So exactly what is an Interposer?*
- **Answer:** An Interposer is a substrate that is used to attach components, as an intermediate step to directly attaching to the main/motherboard. The interposer then becomes the new package for attaching onto the circuit board. This substrate can be made from a wide range of materials, including: FR4, Polyimide, Rogers, Duriod, Getek or Stablcor.



Frequently Asked Questions

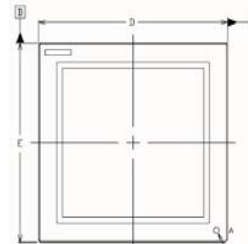
- **Question:** *How can an interposer simplify my design and save us money?*
- **Answer:** Today's fine pitch BGA's (particularly 0.5mm and less) require such fine features at the circuit board level, that it drives up manufacturing costs by driving down yields and adding process steps to the pwb fabrication cycle (i.e. multiple lamination, drilling and plating steps due to blind & buried via applications).
- **Question:** *Is this solution right for us?*
- **Answer:** If you have a large board, with a small number of fine pitch BGA's, then you could simplify the design by containing the complexity within the interposer. Why add layers or blind & buried via's to a large circuit board application, just because of 1 or 2 fine pitch BGA's?

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❖ Murrietta Circuits:

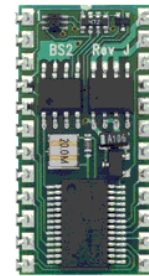
We offer interposer and adaptor solutions for a wide range of footprints and packaging, including:


- ❖ BGA to PGA
- ❖ BGA to QFP
- ❖ BGA to BGA
- ❖ QFP to BGA
- ❖ SMT to DIP
- ❖ SMT to SMT
- ❖ PGA to PGA and more.



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- We can also add custom features like:
 - ❖ Decoupling caps
 - ❖ Power & ground planes,
 - ❖ Jtag connectors (for programming & test)
 - ❖ Voltage regulators
 - ❖ CTE matching and more





Other Problems Our Interposers Solutions Can Solve:

- **Problem** – *The density and packaging of my IC is creating too much heat and causing hot spots on the motherboard.*
- **Solution** – By using a higher grade of materials exclusively on the interposer, you can contain or greatly reduce the heat being generated from this device. In addition, you are containing the cost of the higher grade materials within a smaller footprint, thus reducing your overall production manufacturing costs.
- **Problem** – *The density (or pitch) of my BGA is dramatically increasing the complexity of my main circuit board, thus driving up our production costs.*
- **Solution** – By using fan-out techniques, we can greatly simplify your main/motherboard design by containing all the complexity of the BGA package within a small footprint. The interposer can utilize any footprint style from BGA to BGA, BGA to PGA or BGA to QFP.



Other Obsolescence Solutions

❖ ***Reverse Engineering:***

Murrietta Circuits can completely reverse engineer many simple applications and boards from existing boards, film or schematics that might be available. Complete with re-generated CAD database files, gerber data, bill of materials, fabrication & assembly drawings.

❖ ***Thru-Hole to SMT Conversions:***

We can also completely re-design your thru-hole circuit boards to SMT. Again, with completely re-generated CAD files, BOM's and drawings. This will save money by reducing assembly labor costs, increase quality by allowing for automated assembly and eliminate obsolete components by designing in readily available parts and components.



Thank You!

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