

Ardent Concepts Client Case Study

The Solution: Topside Interconnect – a custom LGA connector solution

Our Client: one of the largest semiconductor manufacturers in the world

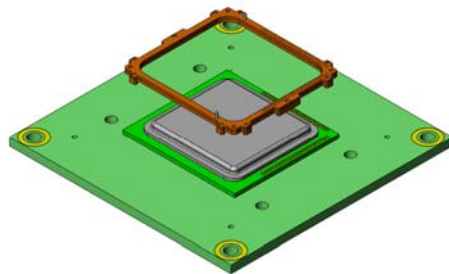
An overview of the solution:

From testing environment to development of next generation processor chipsets for consumer and commercial markets

The initial need was for a product testing environment. As Ardent's custom LGA connector was proven in the test scenario, the R&D engineers became aware of the solution and leveraged Ardent's proven technology for topside chip to diagnostic equipment and chip short haul electrical interconnect.

Client requirements were:

- ✓ Pitch
- ✓ Signal integrity
- ✓ Cost
- ✓ Lead time



The Client's Requirements/Challenges:

Initial test environment challenges...

- ✓ Custom LGA connector for connecting chip to chip/diagnostic probe in testing environment
- ✓ AC performance and scalability
- ✓ Quick turnarounds to support the test engineers' timelines

Developing next gen processor chipsets

- ✓ Leverage point to point interconnect from the top of the device to achieve better signal integrity
- ✓ Topside interconnect is at non-standard pitch
- ✓ Interface z-height issues require frequent customization to the interposer set
- ✓ Need partner who can customize, scale and deliver a cost effective solution that includes high degrees of flexibility in the interposer configuration

Ardent's Solution:

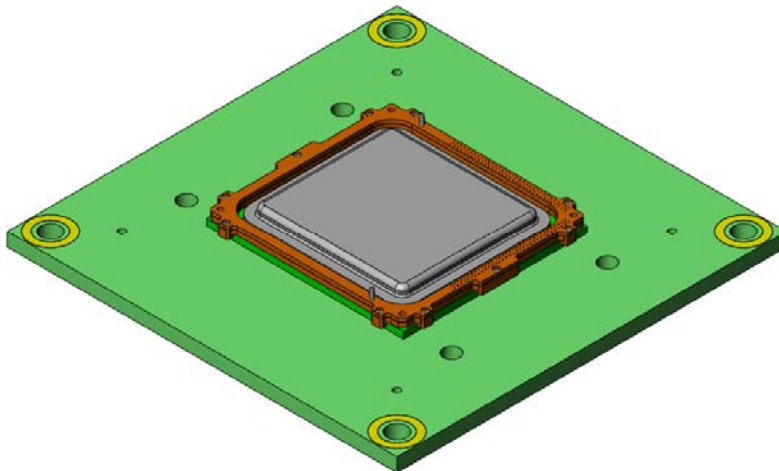
Custom LGA Connector using the patented technology of RC Spring Probe™

Ardent's custom LGA connector enabled the following:

- ✓ Innovative solutions (topside interconnect) due to highly customizable technology with quick turnarounds
- ✓ Pitch sub 0.8 mm
- ✓ Performance: AC performance and signal integrity
- ✓ Scalability
- ✓ High value for the price

Benefits/Business Impact:

- ✓ Benefits in the Test environment:
 - Reduction in lead times as Ardent contact sets are designed into the client's mechanical and electrical models.
 - Virtually unlimited capability in the customization of client's test platforms due to immediate turnaround on custom requests.
- ✓ Topside interconnect (ring connector) benefits included:
 - Improved time to market
 - Elimination of signal integrity issues due to running interconnect through the motherboard; signal integrity goals were achieved
 - Expanded applications for this unique process for other devices in the product stream.



Topside Interconnect – described as *the fastest all-metal compression connector in the world.*