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.