

High-Performance MCP Products – a *Smart* Move

Simon McElrea, Vice President of Product Development & Management

When we first unveiled ultra high density Flash and DRAM 3D products, the cry was not only “how high can you go?”, but also on “how fine can you go?” Fine Pitch that is! Despite the lion’s share of 3D packaging being dominated by flash and DRAM stacking, a critical segment of the market, namely the Multi-Chip Package (MCP) ASIC+Memory segment, had not been addressed by us. Until now that is.

Over the past year, VCI in partnership with its equipment suppliers has pioneered a novel 50um pitch technology to address the primary needs of the mobile microprocessor space: performance, size, and power consumption. These MCP’s (processor plus memory solutions) require closely coupled low-power processors and complex memory caching to service the voracious appetite for video, gaming and streaming on the go. VCI’s unique solution makes use of existing technologies and an installed manufacturing base for the selective dielectric application, but introduces an innovative aerosol jet system to deposit the fine interconnect lines.

Conductors as narrow as 20 um wide and 20um tall can be written conformally in 3 dimensions, enabling the shortest possible “edge-silicon” interconnects on the market. The nano-silver ink lines are sintered at low temperatures to form pure silver conductors with both the performance advantages of short silver lines and a major cost advantage over \$1000+/oz gold wire. We are presently in the process of qualifying mobile customer products enabled by this solution with the goal to be in high volume production later in 2010. The go-to-market products? Smart Phones, Net Books, and Smart Books of course; hopefully a very *Smart* move.