Exhibit 29

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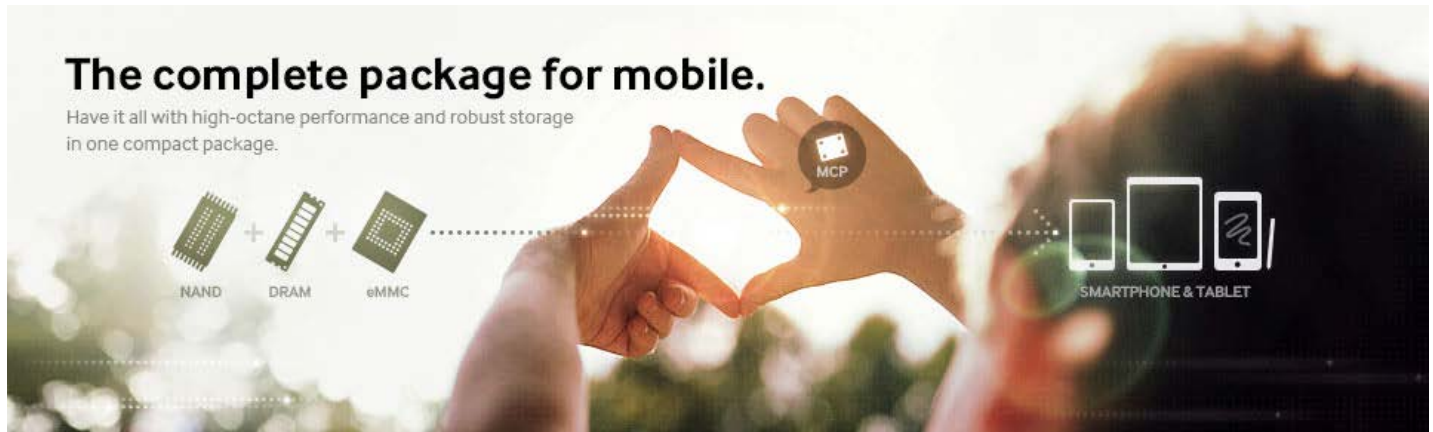Tweet 0   Like 1   PRODUCT SEARCH

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Samsung Multi-Chip Packages

Innovative "chip-stack" design optimizes board space

Find out why leading manufacturers choose Samsung Multi-Chip Packages (MCPs) for applications where board space is extremely limited, such as smartphones and other mobile handsets, tablets, and multimedia players. MCP memory configurations are designed to support a growing list of device capabilities, expanding freedom and choice for users who want to do more with their mobile applications.

Unify memory technologies on a single substrate

Samsung MCPs combine different memory technologies, including single-level cell (SLC) NAND flash or eMMC and Mobile DRAM such as LPDDR1 (low-power DDR1) and LPDDR2 on a single substrate. This flexible approach is designed to deliver benefits including:

Enhanced memory and overall system performance through tight coupling and close positioning of memory modules to establish the shortest interconnections possible in a small, high-density package

Average 30 percent to 40 percent savings in board space for your end product through the stacking of several memory chips in a vertical configuration

Minimized bill-of-materials count for simplified manufacturing and cost savings

Accelerated time to market through rapid integration of MCP modules, speeding the pace of product development

The broad Samsung MCP portfolio includes a myriad of memory configurations, primarily with 2-, 3-, or 4-die packages. The most popular combinations are 1Gb+512Mb; 2Gb+1Gb; 4Gb+2Gb (NAND and Mobile DRAM); as well as new eMMC-based MCP (eMCP) combos such as 4GB eMMC + 4Gb MDDR, and 32GB eMMC + 8Gb LPDDR2. The newest-generation eMCP modules are designed to contain a combination of the fastest eMMC (embedded multimedia card), along with either MDDR or LPDDR2 memory.

Deploy the latest technology for mobile processors

Samsung MCPs optimize designs for a comprehensive range of new and evolving consumer electronic devices.

Many Samsung MCPs are built using the company's low-power memory technology (flash and DRAM) so that mobile devices consume as little power as possible.

Core Samsung MCP technology takes advantage of the company's expertise in wafer thinning, die stacking, and wire bonding.

Memory included in Samsung MCPs is manufactured using highly advanced process technologies, including 20nm-class and 30nm-class.

Consistent use of packaging and footprint makes it easy to scale between different Samsung MCP combinations.

For virtually any mobile phone, Samsung offers a mass-produced MCP solution to enable the desired feature set. In fact, Samsung has been qualified in many reference designs from top-tier chipset vendors. In addition, Samsung can produce custom MCPs quickly to help meet demanding design schedules.

Stay competitive in the mobile device market

Samsung MCPs help you stay ahead of the competition in the fast-moving mobile device market. With minimized power consumption, small size, and high memory density, Samsung MCP solutions offer the memory foundation to build a full spectrum of high-end consumer electronic devices. Use Samsung high-density MCPs to capitalize on the growing trend for powerful multimedia applications and wireless Internet support that today's consumers expect from their portable devices.

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