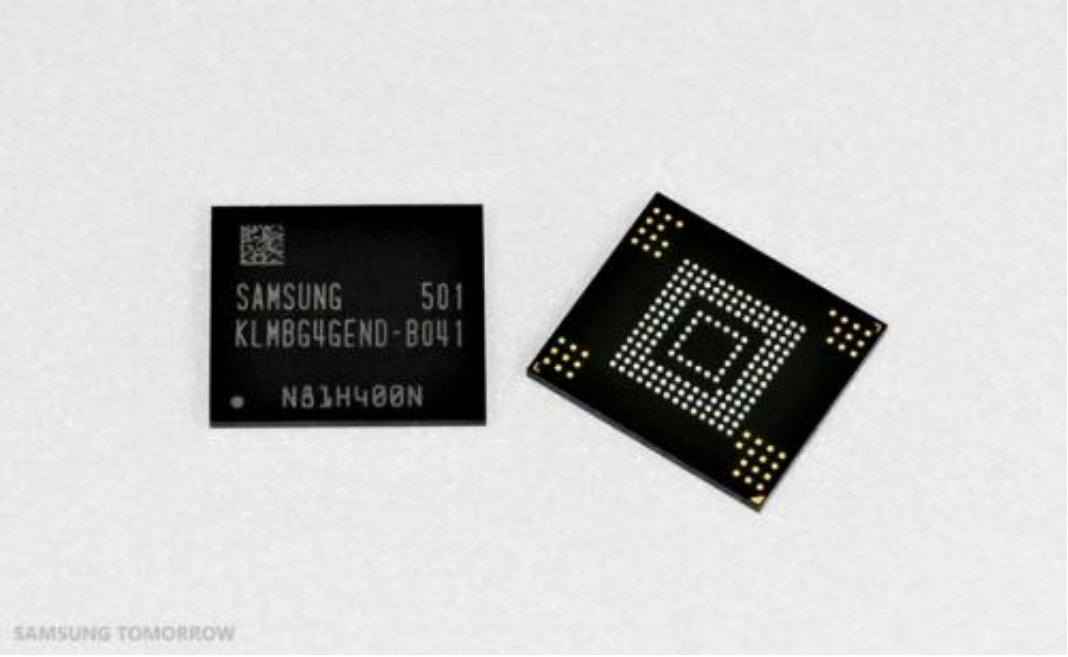
Samsung offers new ePoP memory for smartphones

February 6 2015, by Nancy Owano



Credit: Samsung

(Phys.org) —High-end smartphones to come, if they could talk, would deliver a message to Samsung, relaying thanks for the memory. Samsung Electronics has announced they are mass-producing an "embedded package on package" (ePoP) memory for use in high-end smartphones. Samsung said this is a tech improvement over existing two-package eMCP memory solutions. This presents an opportunity for more space for a battery pack in slim handsets. In talking about the ePoP phone

memory stack, *Korea IT Times* described ePOP as "a memory chip package that combines DRAM, NAND flash and controller into one memory, enabling them to be piled on top of a mobile application processor."

The Samsung announcement was posted on the Samsung Electronics official global blog. The announcement said that this is a memory package with 3GB LPDDR3 DRAM, 32GB embedded multimedia card and a controller. The saved-space factor is key to the news; ePoP combines all essential memory components into a single package which can be stacked directly on top of the mobile processor without taking up any additional space—all memory on a single ePoP module. Samsung said ePoP does not need any space beyond the 225 square millimeters (15x15mm) taken up by the mobile application processor. Samsung also said the 3GB LPDDR3 mobile DRAM inside the ePoP operates at an I/O data transfer rate of 1,866Mb/s, with a 64-bit I/O bandwidth.

The one-package memory solution was created to address market needs for high speed, high energy efficiency and compactness. Jeeho Baek, senior vice president of memory marketing at Samsung Electronics, said Samsung expects to provide customers with "significant design benefits" along with faster, longer operations of multi-tasking features. Phone manufacturers can use the available space for components such as the battery pack. The new memory solution could save up to 40 percent of space in a smartphone.

The phone has special heat-resistant properties; *BusinessKorea* said, "As NAND flash is generally sensitive to heat, it was previously thought to be difficult to stack any above a mobile AP that processes at a high temperature. However, Samsung Electronics raised the heat resistance limit of its NAND flash, breaking the common idea in the industry, and launched ePoP, calling it 'wearable memory.'" Samsung has already been offering a similar single-package solution for wearable devices; the new

configuration can be customized for flagship smartphones.

Going further into translation of how this might affect consumer phones, *BGR*'s Chris Smith said on Thursday that people looking forward to seeing some of Samsung's 2015 "top-shelf devices in stores, including the Galaxy S6," might have reason to be excited about this new type of component. Since more space is cleared inside a mobile device, there is the opportunity of expanding the battery capacity of the device. "That's particularly useful for slimmer smartphones," said Smith, "as smartphone makers have yet to crack the battery problem and are still trying to figure out ways of improving smartphone battery life."

Will ePoP chips be a factor in Galaxy S6 phones? Even if not, Smith said that "such ePoP designs could be used in upcoming flagship smartphones and tablets, even if the Galaxy S6 is skipped."

More information: global.samsungtomorrow.com/sam … ory-for-smartphones/