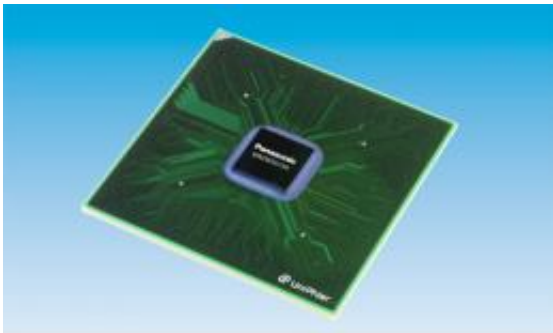


Panasonic to start commercial shipment of 32-nm generation system LSI

September 16 2010



Panasonic MN2WS0150 System LSI
using gate-first, high-k/metal gate manufacturing process
September 2010, Panasonic Corporation

Panasonic MN2WS0150 system LSI using gate-first, high-k/metal gate manufacturing process. September 2010 Panasonic Corporation

Panasonic Corporation has successfully developed a new mass-production technology for leading-edge 32-nm generation system LSIs, and is ready to ship system LSIs (model number: MN2WS0150) based on this technology from October 2010 for use in Blu-ray Disc players. This advanced technology enables system LSIs with higher performance and lower power consumption to be used for consumer electronics including digital TVs, Blu-ray Disc recorders and players.

As the market for new consumer electronics, such as Blu-ray 3D Disc 2 players, is rapidly growing, there was an urgent need for a mass-production technology that can support low-power, high-performance

microscopic [transistors](#) on 32-nm or later generation system LSIs.

The world's first technology Panasonic has developed for fabricating high-k/metal gate transistors in a gate-first process can significantly improve CMOS transistors' performance by up to 40% compared to its current models. The MN2WS0150 [system LSI](#), featuring 32-nm generation transistors and Panasonic's proprietary UniPhier integrated platform for digital consumer electronics, is designed for Blu-ray Disc players which are compatible with Blu-ray 3D discs. The newly-developed technology enables reducing LSI's [power consumption](#) by approximately 40% and the mounting footprint by 30% compared to the current models by employing high-density integration of the microscopic transistors and power consumption control according to the LSI's operations.

Panasonic's advanced 32-nm generation system LSI's have been realized based on the following technologies:

- New [CMOS](#) process technologies for multi-V_{th} based on new gate structure forming technologies employing hafnium (Hf)-based high-k gate dielectrics and metal gate electrodes, and microscopic Cu wiring technologies using ELK (extremely low dielectric constant) dielectrics that reduce signal delay on wires.
- MPEG-4 MVC (multiview video coding system, an extension to the ITU-T H.264 advanced video coding system) decoding technologies for Blu-ray 3D, HDMI high-speed data transfer circuit technologies, and high-performance and high-speed graphics engine technologies that also support 3D and curved surface drawing.
- Power-saving circuit technologies that minimize power consumption according to the LSI's operations, such as clock frequency control, supply voltage application/shut-off and high-speed analog/digital mixed signal circuit forming technologies.

Provided by Panasonic

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