Industry's First Dual-Channel Video Format Converter with Dual 3-D Architecture for HDTV Displays

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National Semiconductor Corporation (NYSE:NSM) today introduced the industry's first dual-channel video format converter for high-definition television that features two high-quality video conversion channels and dual 3-D architecture. The AVC5000 enables picture-and-picture rendering of two high-quality images on a widescreen high-definition digital television (HDTV) with up to 1080p (line progressive) display resolution.

"National Semiconductor is the technology leader in providing high-performance, mixed-signal system solutions for the rapidly growing digital television market," said Jean-Louis Bories, senior vice president for National's Displays Group. "Our AVC5000 adaptive video converter with its unique dual 3-D architecture sets a new standard for image quality and adds to a growing portfolio of solutions for the television and home theater markets."

The AVC5000 contains a universal front-end that accepts standard- and high-definition video and PC graphic formats. The dual 3-D architecture includes two 3-D video channels, flexible scaling, multi-picture functions and advanced video enhancements for superior image quality and an extensive set of functions.

"Side-by-side viewing of two images on a display is one of the compelling features enabled by high-resolution widescreen televisions,"

said Dr. Nikhil Balram, chief technology officer for National's Displays Group. "The AVC5000 is the industry's first dual 3-D solution that enables two high-quality images on one screen."

Technical Features of the AVC5000

The AVC5000 dual 3-D video format converter is comprised of two main blocks: a universal front-end and a dual-channel display processor. The universal front-end accepts standard- and high-definition video formats, PC graphics formats and DVI signals, decoding the signals into component video or RGB. It contains seven analog-to-digital converters, one TMDS receiver and two NTSC/PAL/SECAM decoders with 3-D Y/C separation. Two outputs from the universal front-end can be selected for the dual-channel display processor.

The dual-channel display processor features two 3-D noise reducers, two 3-D deinterlacers and two high-order scalers for size and aspect ratio scaling. Additional features include luma and chroma enhancement; frame-rate-conversion; adaptive contrast enhancement; multi-picture functions such as side-by-side viewing of two full-quality images on a wide screen; intelligent color remapping; and the generation and overlay of a bitmapped on-screen-display (OSD).

The AVC5000 also features the industry's first integrated, dual-channel 10-bit LVDS transmitter. The output signal formats of the AVC5000 include analog RGB or YPbPr for CRT displays, and TTL or LVDS for flat panel or microdisplay.

The AVC5000 is packaged in a 544-pin ball grid array (BGA). National also offers all of its packages with a lead-free option. Samples of the AVC5000 are available now by contacting a National Semiconductor sales or distribution representative. In 1,000-unit quantities, the AVC5000 is priced at $125 each.