Smart Voice Processors Present New Clarity to Mobile Conversations

STMicroelectronics has introduced a digital audio processor for multi-microphone applications. ST's new Smart Voice product family combines exceptional processing performance with desirable scalability and programmability to bring dramatic sound-quality improvements to mobile phones, tablets, gaming devices and video security systems. The audio processors unleash the capabilities of digital MEMS microphones in multi-microphone arrays, enabling features like acoustic echo cancellation, noise suppression, or beam-forming, which are invaluable with the increasing use of cell phones and other consumer devices in noisy and uncontrollable environments. Multi-microphone systems also address next-generation audio applications, such as 3D sound processing, sound-source localization, virtual microphones, and audio zooming.

The combination of ST's Smart Voice processors and digital MEMS microphones creates a powerful and flexible acoustic sub-system that brings crucial advantages to equipment manufacturers and users alike. Manufacturers will benefit from a simplified system design, which reduces costs and time to market and facilitates end-product differentiation, while consumers will enjoy clearer conversations and longer battery life on their devices.

A technology breakthrough, ST's newest digital audio processor is based on an optimized hard-wired acoustic processing engine that offloads intensive computing tasks from the main application processor. It handles up to 6 digital microphone inputs with dynamic array re-configuration and dedicated channel processing. The device integrates a high-quality scalable acoustic processing core with a tunable 10-band equalizer, a peak limiter, and gain and volume controls. The data are output through a digital (I2S) or analog (PWM) interface.

ST's Smart Voice processors come in a bundle with AP Workbench, a user-friendly programming tool, and together with the Company's MEMS microphones and Sound Terminal class-D audio amplifiers they form a complete one-stop offering for advanced sound-input applications.

The STA321MPL, the first device in ST's Smart Voice family, is sampling now. Mass production is scheduled for Q2 2012, with unit pricing at $4 for volumes in the range of 1,000 pieces.

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