Audio System-on-a-Chip Is Presented as World's First

Wolfson Microelectronics plc has announced the WM5100, said to be the world’s first Audio System-on-a-Chip (SoC), integrating a low power, multi-channel audio hub, with full transmit path (Tx) noise cancellation, receive path (Rx) noise cancellation and the company’s myZone adaptive ambient noise cancellation (ANC) technology in one device. This solution, aimed primarily at mobile handsets and tablet PCs, enables desirable high definition (HD) audio performance, while improving speech clarity for both the caller and the listener. The technology is asserted to enable users to make and receive significantly clearer voice calls in high noise environments.

This multi-channel Audio SoC, featuring a multi-core programmable digital signal processor (DSP) for audio processing, enables simultaneous multiple use-cases combined with sound enhancements, noise cancelling algorithms and Wolfson’s unique class-leading ANC technology on the one device, energizing the overall user experience. Crucially for consumer electronics manufacturers, having all these features packed into one device reduces the bill of material cost and PCB area. The modular architecture design, software compatibility and being agnostic to the different operating systems also makes design-in quicker, enabling faster time-to-market for new products incorporating this device. The WM5100 also delivers the added benefit to network operators of increased revenue since the solution results in less dropped calls due to listening problems in noisy environments.

As well as bringing significant improvements to voice call quality, the WM5100 also features full duplex Acoustic Echo Cancellation (AEC) technology which enables crystal-clear natural-sounding conversation in hands-free and speaker modes. With environmental noise suppression, 5.1 virtual surround sound, and digital recording enhancement, the WM5100 also enables HD Audio capture and playback, ensuring that the quality of the audio in a mobile phone, tablet PC or other handheld multimedia device, matches that of the video and imaging quality.

Duncan Macadie, Product Line Manager for Audio Hubs at Wolfson Microelectronics, said: “As audio components in mobile phones and tablet PCs are increasingly becoming dis-integrated from the application processor, the demand is growing for separate Audio SoCs, and Wolfson is leading the way with the WM5100, the world’s

first Audio SoC with integrated full transmit path, receive path and adaptive ANC and AEC technology.

“The WM5100 manages to combine the latest low power Audio Hub, DSP, noise cancelling and echo cancelling technology to significantly improve audio record and playback quality and battery life, as well as solve a major problem in the mobile phone industry: enabling the user to make and receive consistently highly intelligible calls, whether in a quiet room or a noisy environment.”

Availability and pricing

The WM5100 will be available for sampling later in Q3 in a 155-ball CSP package. The pricing for the WM5100 is $6.20 for 1k volume.

Wolfson Microelectronics plc
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