Ultrasound System Design Advanced With Low-Power Receiver ICs

Analog Devices Inc., a leading provider of data-conversion technology and longtime collaborator with the medical imaging industry, launched the fourth generation of its award-winning octal (eight-channel) ultrasound receivers with the introduction of two new ICs that reduce system size, complexity, and power consumption for high-end, mid-range, and portable ultrasound systems. The need for smaller, faster, lower-power ultrasound equipment continues to grow as hospitals, medical clinics, and medical emergency units increasingly rely on more sophisticated ultrasound equipment for providing diagnostic imaging.

The AD9278 and AD9279 receiver chips each integrate ADI’s world-leading data conversion technology for low noise TGC (time-gain-control) mode performance while providing high dynamic range I/Q demodulators that reduce the power and area for implementation of CW (continuous wave) Doppler processing. The octal ultrasound receivers provide the highest available output-referred large-signal SNR—up to 67 dB—enabling improved sensitivity in diagnostic ultrasound systems while reducing board space up to 40%.

The AD9278 octal ultrasound receiver is designed for portable ultrasound systems while the AD9279 octal ultrasound receiver is suitable for high-end and mid-range systems. The devices are pin- and package-compatible with each other and allow designers to use a common PCB (printed circuit board) layout that can be leveraged across multiple ultrasound platforms to save development time and cost.

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