

Blood Flow Velocity Comes to Ultrasound Images



Texas Instruments Inc. has introduced two new fully integrated analog front ends (AFE) with a continuous wave (CW) Doppler mixer for mid- to high-end, Spectral Doppler ultrasound equipment. The AFE5807 and AFE5808 address ultrasound designers' need for superior performance and image quality with the best noise performance at 0.75 nV/rtHz. In addition, the integrated CW mode measures and displays blood flow velocity in ultrasound images. These new devices are 25% smaller than competing solutions, ensuring a compact system footprint for higher channel count.

Additional key features and benefits of the AFE5807 and the AFE5808 include:

- Integrated CW Doppler mixer and summing amplifier with a very low close-in phase noise better than -155 dBc/Hz at 1 KHz off a 2.5 MHz carrier to ease design with CW beamforming
- AFE5807 is a low-power solution with 88 mW/Ch at 1.1 nV/rtHz, 40 MSPS, 12-bit sampling.
- AFE5808 is a high-performance solution with low-noise optimization of 0.75 nV/rtHz, 149 mW/ch, 65 MSPS and a 14-bit analog-to-digital converter (ADC) with 77 dBFS SNR (signal-to-noise ratio).

AFE5807 and AFE5808 extend TI's AFE58xx family of fully integrated ultrasound analog front ends, including the AFE5805 and AFE5804 for portable to mid-range ultrasound and the AFE5801 and AFE5851 for handheld, ultra-portable ultrasound. All AFE58xx devices are complemented on the transmit side by TI's TX810 T/R switch and join TI's full portfolio of embedded processing, analog, and power management solutions for ultrasound applications, allowing manufacturers to bring innovative ultrasound systems to market faster.

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