Supporting Information

Shpak et al. 10.1073/pnas.1312171111

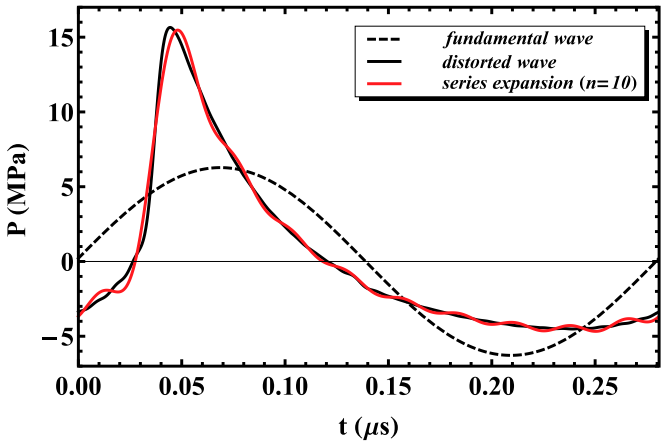

Fig. S1. Wave distortion through nonlinear propagation. The black solid line is the pressure waveform at the focus of the transducer simulated with our KZK code (1) using Eq. **1**. The red solid line represents ten superharmonic terms used to represent the nonlinear ultrasound pressure wave given by Eq. **2**. The black dashed line is the first harmonic term at the fundamental frequency of the wave. The figure shows that by truncating Eq. **2** after ten harmonics, the exact waveform is accurately represented. The difference between the actual wave, and the wave represented by 10 harmonics can be quantified by subtracting their power densities. For this particular case simulated at a center frequency 3.5 MHz and at a propagation distance of 3.81 cm the difference was found to be less than 0.6%.

1. Vos HJ, Goertz DE, de Jong N (2010) Self-demodulation of high-frequency ultrasound. *J Acoust Soc Am* 127(3):1208–1217.