

Supplemental Materials

Figures S1 and S2 are alternate versions of Figures 4 and 5 with the frequency spectrum plotted on the dB scale. In Figure S1, the frequency domain amplitudes are normalized with respect to the peak spectral amplitude at the primary frequency. The dB scale allows better visualization of the changes in the second harmonic amplitudes due to system nonlinearity at Points A-D. In Figure S2, we want to point out that the values for the relative nonlinearity parameters obtained at Points A-C in dB scale are different from those obtained in the linear scale due to the normalization. Figure S3 shows the data to which the attenuation coefficients are fit.

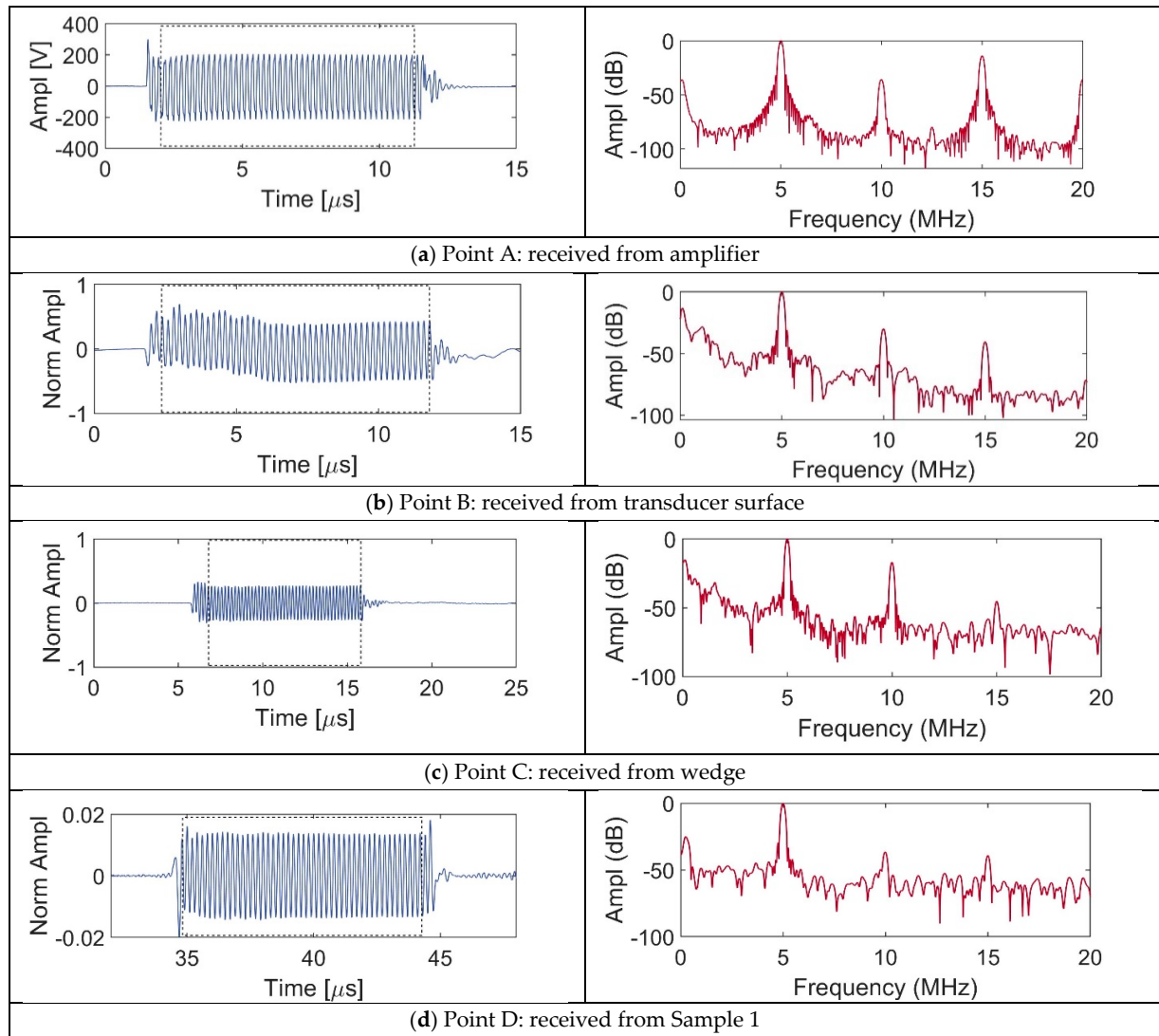


Figure S1. A-scan and frequency spectrum given a toneburst excitation ($f_0 = 5$ MHz) at the 75% output level: (a) Point A, (b) Point B, (c) Point C, and (d) Point D.

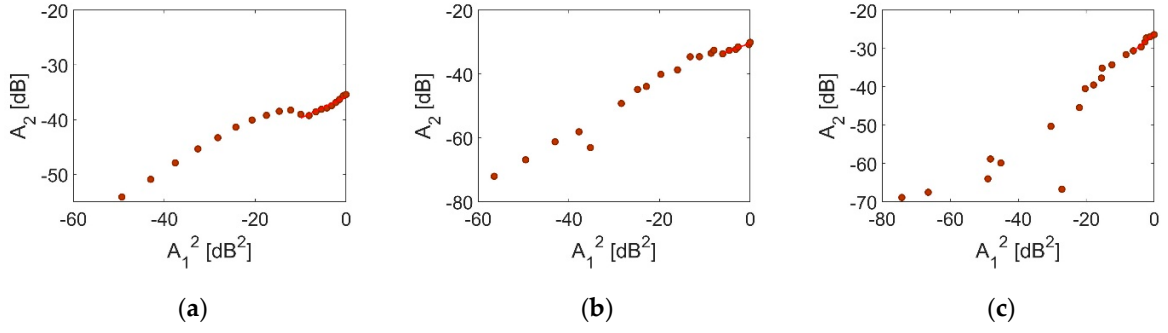
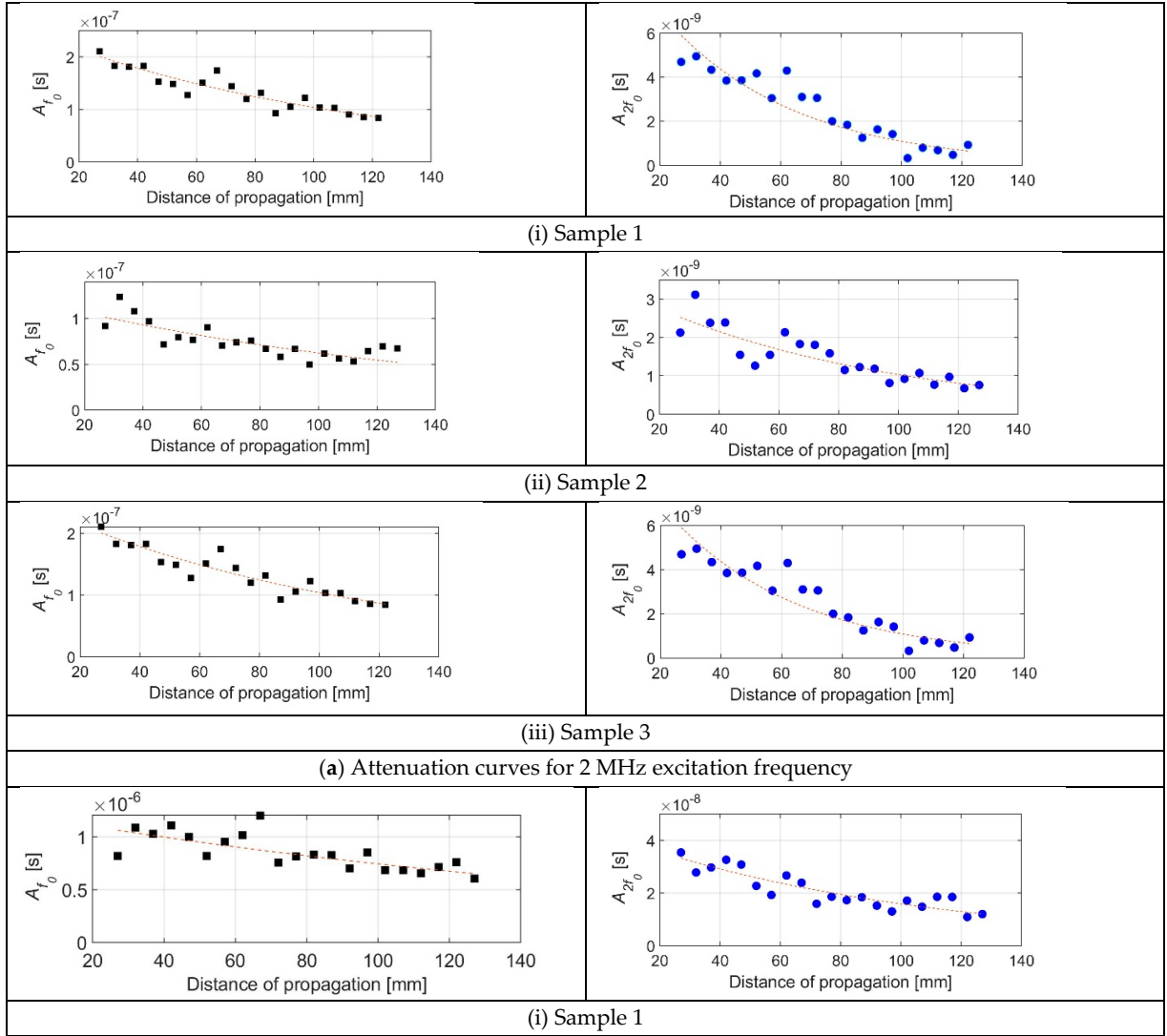


Figure S2. Linear regression to determine the relative nonlinearity parameter for the measurement system given a 5 MHz signal: (a) $b' = 0.3942$ at Point A , (b) $b' = 0.5370$ at Point B, (c) $b' = 0.7478$ at Point C.



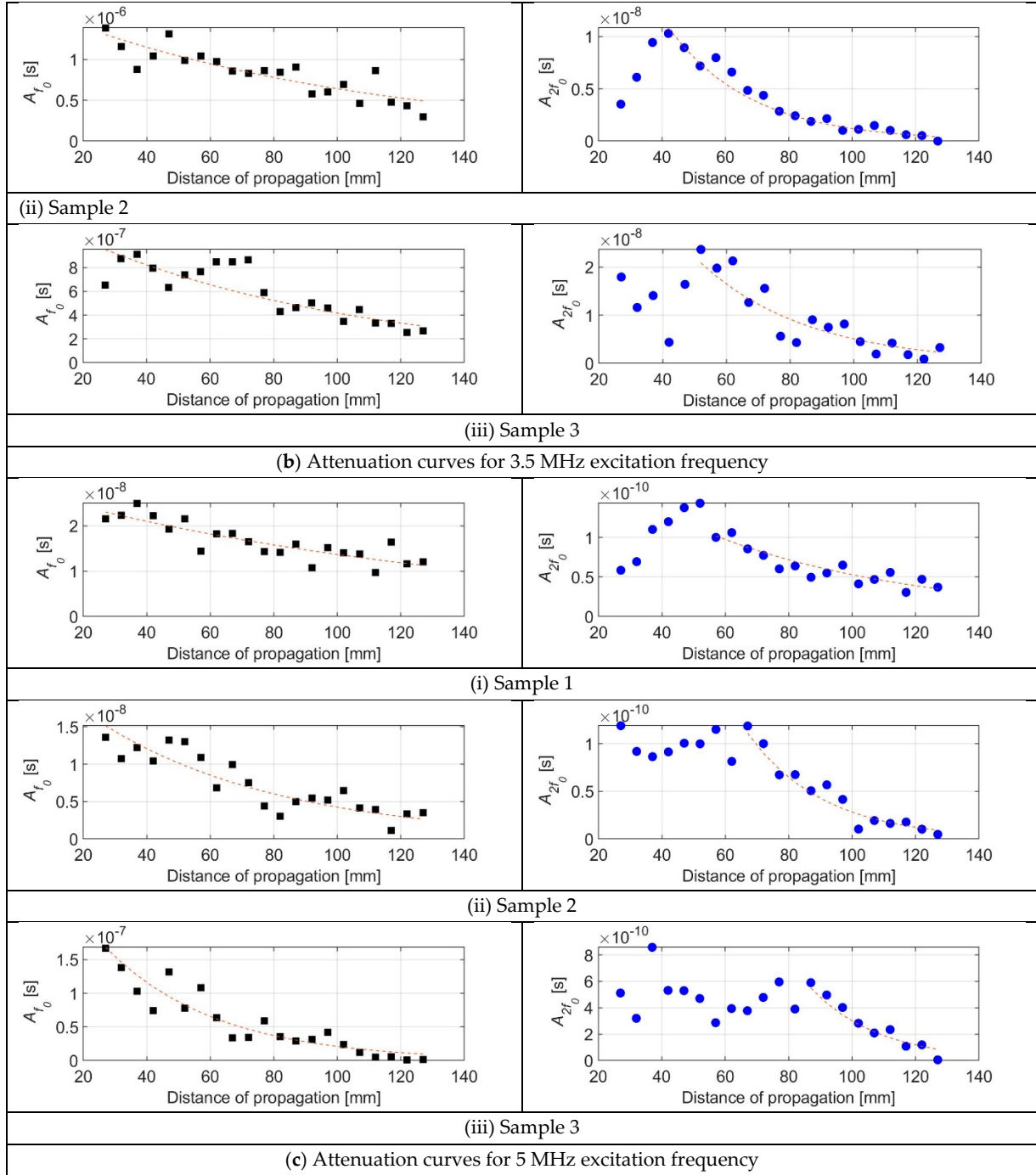


Figure S3. Attenuation curves for Rayleigh waves propagating on Samples 1-3 having primary frequency (a) 2 MHz, (b) 3.5 MHz, and (c) 5 MHz.