

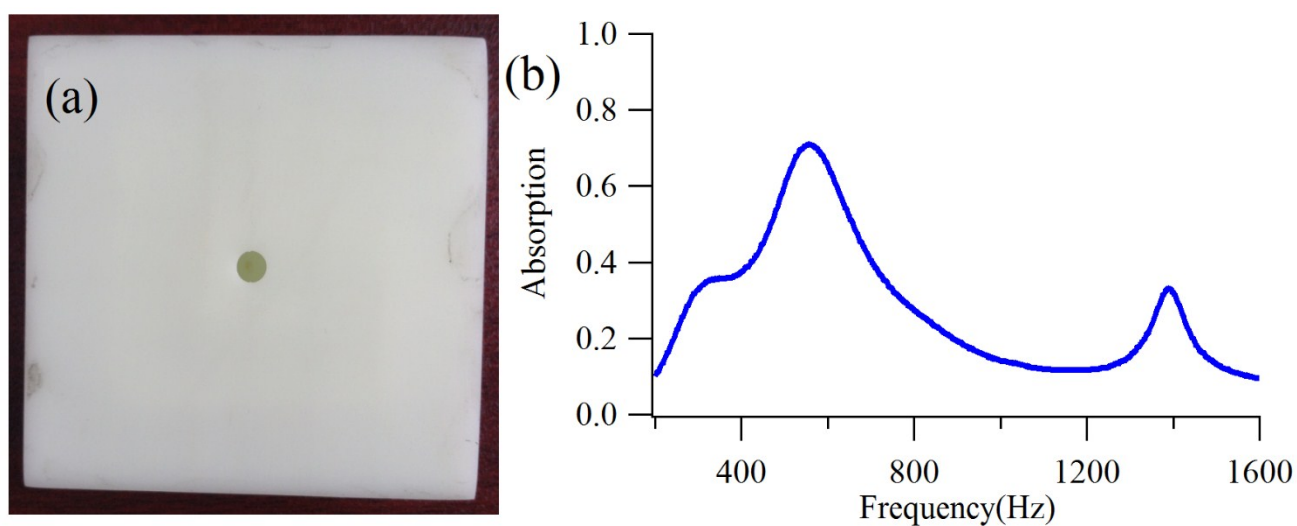
Supplementary materials

Three-dimensional sub-diffraction focusing by coiled metamaterials with strong absorption

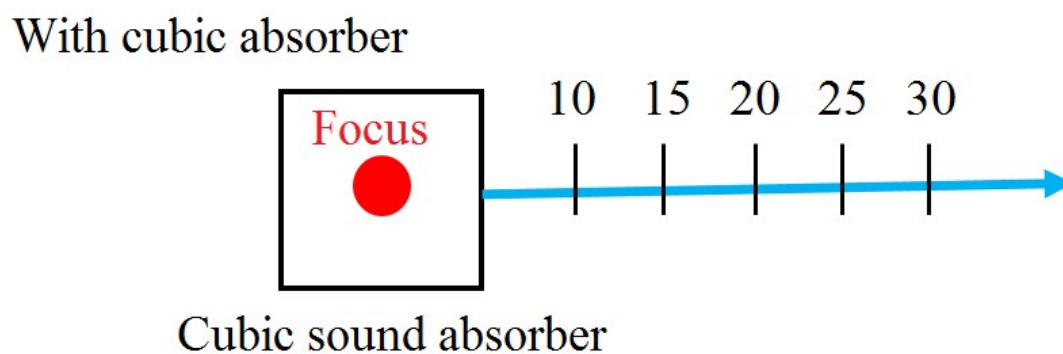
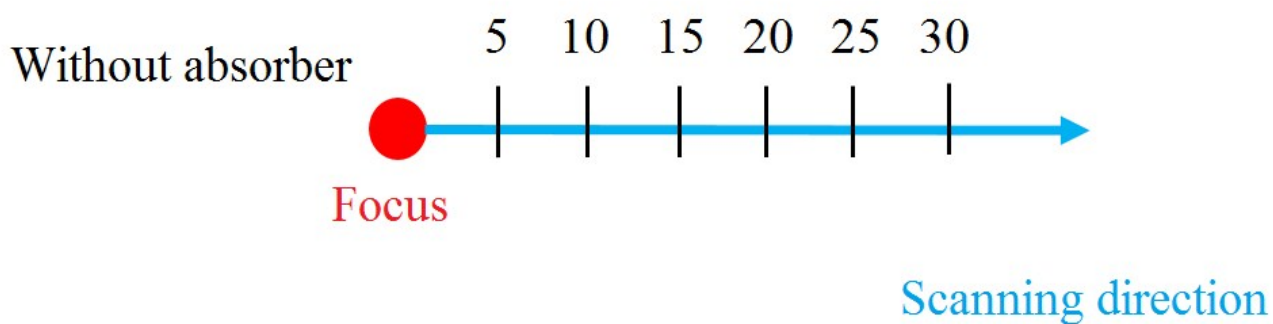
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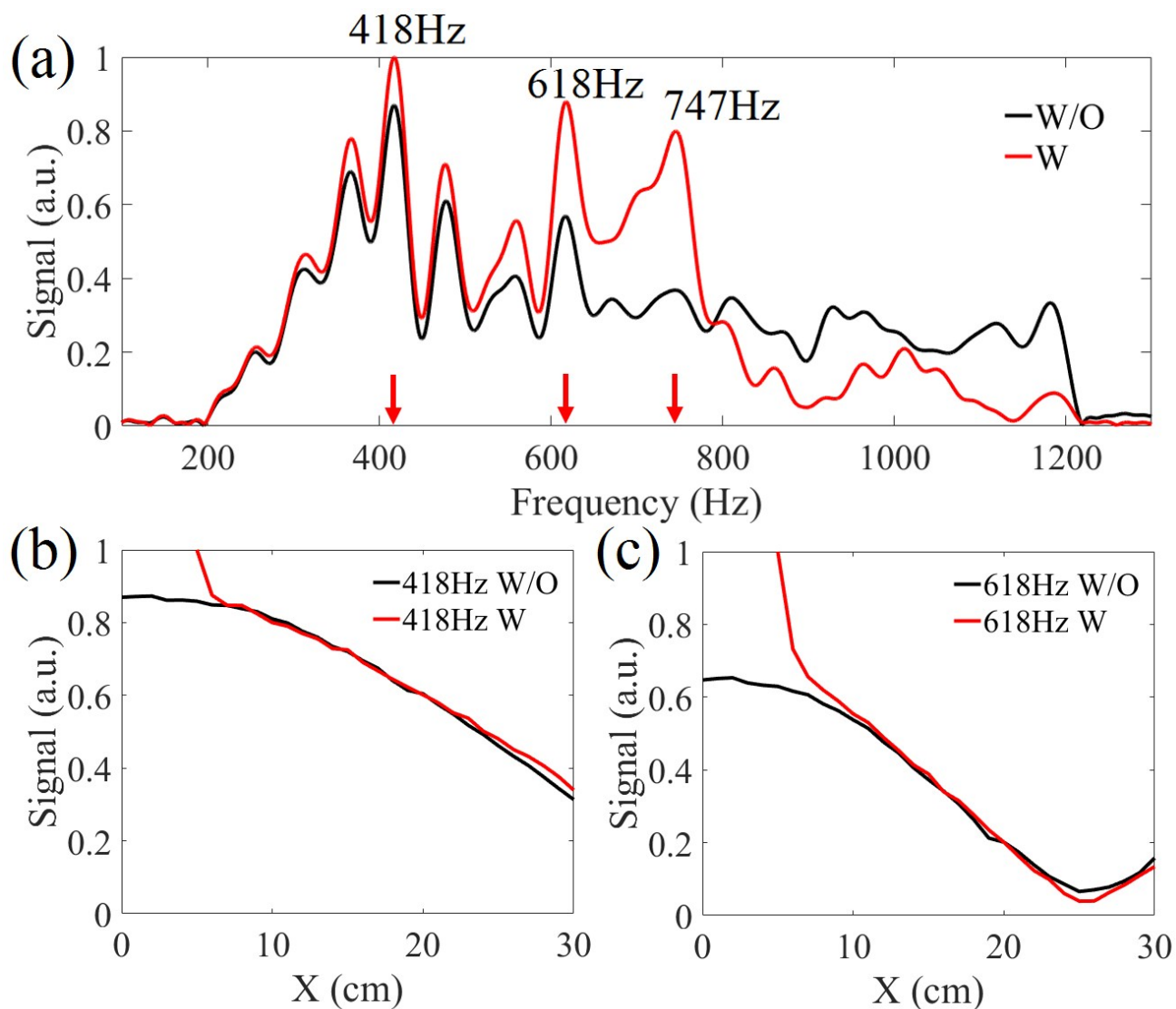
Supplementary Figures



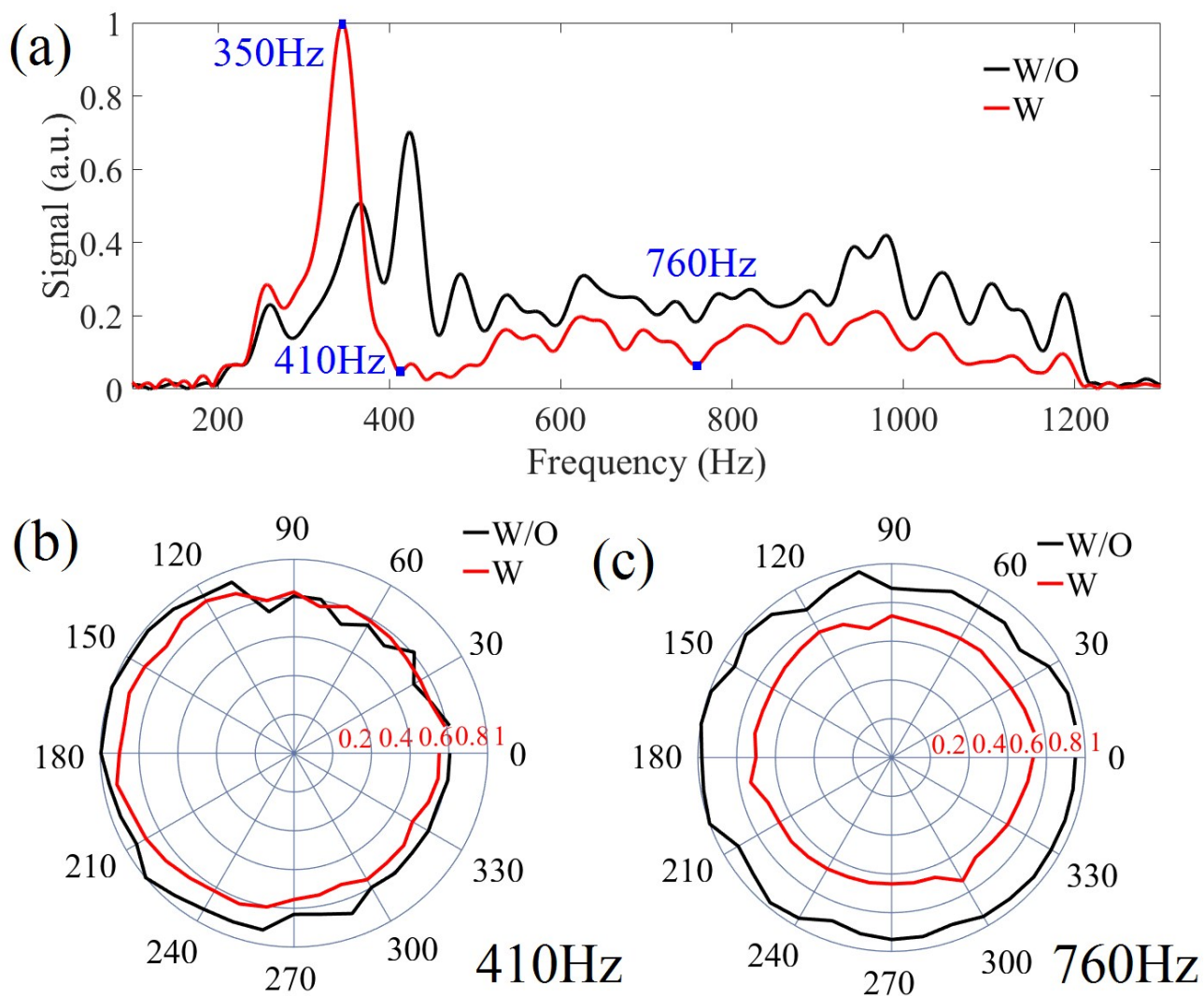
Supplementary Figure 1. The perforated coplanar spiral sample with single-hole and its sound absorption coefficient. (a) Single-hole sample fabricated by 3D printing. (b) Sound absorption coefficient measurement results.



Supplementary Figure 2. Schematic diagram of the linear sweeping measurement for the cases without absorber and with a cubic absorber.



Supplementary Figure 3. Spectral of cases with/without Ball-1 sample and focusing effect. (a) Spectral of the focus center (without sample) and the sample surface (with Ball-1 sample) for cases with or without sound absorber. The focusing effect at the first (b) and second (c) spectral peaks.



Supplementary Figure 4. Spectral of cases with/without Ball-2 sample and focusing directivity. (a) Spectral of the focus center (without sample) and the sample surface (with Ball-2 sample) for cases with or without sound absorber. The focusing effect at 410Hz (b) and 760Hz (c).