

Received audio data may include a first set of frequency coefficients and a second set of frequency coefficients. Spatial parameters for at least part of the second set of frequency coefficients may be estimated, based at least in part on the first set of frequency coefficients. The estimated spatial parameters may be applied to the second set of frequency coefficients to generate a modified second set of frequency coefficients. The first set of frequency coefficients may correspond to a first frequency range (for example, an individual channel frequency range) and the second set of frequency coefficients may correspond to a second frequency range (for example, a coupled channel frequency range). Combined frequency coefficients of a composite coupling channel may be based on frequency coefficients of two or more channels. Cross-correlation coefficients, between frequency coefficients of a first channel and the combined frequency coefficients, may be computed.