

SYSTEMS AND METHODS FOR MODIFYING ROOM CHARACTERISTICS FOR SPATIAL AUDIO RENDERING OVER HEADPHONES

ABSTRACT OF THE DISCLOSURE

An audio rendering system includes a processor that combines audio input signals with personalized spatial audio transfer functions having room responses. The personalized spatial audio transfer functions are selected from a database having a plurality of candidate transfer functions derived from in-ear microphone measurements for a plurality of individuals. Alternatively, the personalized transfer functions are derived from actual in-ear measurements of the listener. A room modification module allows the user to modify the personalized spatial audio transfer functions to substitute a different room or to modify the characteristics of the selected room without requiring additional in ear measurements. The module segments the selected transfer function into regions including one or more of direct; head and torso influenced; early reflection, and late reverberation regions. Extraction and modification operations are performed on one or more of the regions to alter the perceived sound.

Fig. 3