

Product Sound Quality – A Permanent Challenge for Sound & Vibration Measurement Technologies

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Abstract

Sound is omnipresent in the perceptual world because the human ear cannot be naturally switched off to avoid acoustic input. Thus, this sensory dimension greatly influences the quality of life. Sound conveys information (among others about quality, functionality), implies certain images (as for example luxury, sportive, cheap), can be identified like visual impressions (acoustic fingerprint, acoustic DNA) and can transmit emotions like fear, danger or joy. The enormous potential of the auditory sensory dimension has almost been recognized in the context of designing products several years ago. The sound of a product is able to enhance its acceptance, to create an impression of high quality and high-performance, and is able to produce a feeling of safety. Sound quality is a perceptual reaction to the sound of a product that reflects the listener's reaction of how acceptable the sound of the product is. Sound quality is an important product feature which significantly influences the perceived product quality. Over recent years, the broad variety of products, which resulted in increased competition, has led to rising customer demands with regard to sound quality aspects. Apart from the indispensable troubleshooting, the acoustic engineer's scope of work is extended to sound design engineering using psychoacoustics. Thus, innovative, ambitious measurement, analysis and simulation technologies were developed to meet these new, challenging tasks and to maintain a competitive advantage.