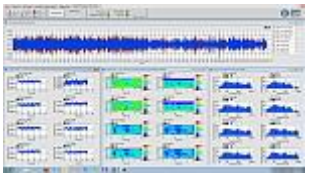
BSR SUITE Sound Quality - Objective evaluation of acoustic quality

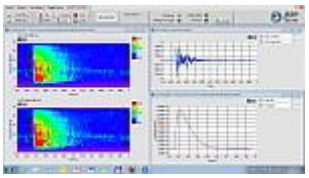
The subjectively perceived sound quality has an increasing influence on the quality opinion and buying decision of end users. Standard acoustic analyses such as sound level or octave band spectra are often times limited in their significance because sound quality is not only determined by the volume and frequency composition of a noise.

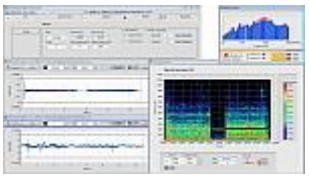
BSR SUITE Sound Quality allows a more detailed metrological evaluation of important subjectively perceived sound characteristics based on psychoacoustic analysis describing the roughness, sharpness, tonality and fluctuation strength of a sound. Project- and product-specific measurement data, valuation methods and limits can be comfortably managed and are thus available for subjective cross comparison and offline evaluation of acoustic quality.

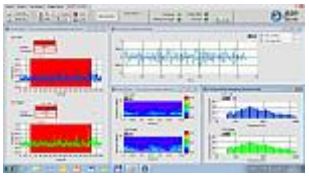
Contact MB Dynamics to discuss your sound quality application.

BSR SUITE Sound Quality - Objective evaluation of subjectively perceived sound characteristics









Applications:

- Analysis and optimization of functional and operating noises on different products
  - Automotive
  - White goods
  - Consumer electronics etc.
- In-line test systems for evaluation of acoustic quality
  - Electrical drives
  - Seat adjusters, roof systems
  - Hard discs, hair dryers etc.
- Analysis and optimization of acoustic feedback of actuators and control elements

Features:

- 4-16 input channels (scalable) incl. software selectable IEPE power supply
- Pre-definable test setups for sound quality evaluations on different products
- Recording of noise signals to hard disk parallel to running real-time analysis
- **Maximum resolution in time- and frequency domain** by user-defined independent block-lengths for each analysis
- Sound Quality Analyses include:
- Stationary Loudness in compliance with ***ISO 532, DIN45631*** and ***ISO/R 131***. (Specific loudness spectra, Loudness [Sone], Loudness [Phon])
- Time-Varying Loudness in compliance with ***DIN 45631/A1*** (Specific Loudness spectra [Sones/Bark] & Time-Varying Loudness [Sone])
- Sharpness (Specific Sharpness spectra & Sharpness [acum])
- Roughness (Specific Roughness spectra & Roughness [asper])
- Fluctuation Strength (Specific Fluctuation Strength specta & Fluctuation Strength [vacil])
- Tonality (1/3 octave spectra & Tonality [tu])
- Testing against user definable thresholds or reference curves
- Cutting, filtering, amplifying and resampling of recorded sound data for offline analysis and subjective evaluation
- Import of externally recorded data (WAV-, CSV- or TXT-format)
- Direct transfer of data and graphs in Office programs

Sound Quality analyses measure the subjective impression based on physical quantities of the sound

Sharpness:

The hearing sensation of Sharpness corresponds to the amount of high-frequency energy compared to the total energy of a sound. The greater the proportion of high frequencies the "sharper" the sound. Sharpness is used to qualify the sound quality of engine noise, electrical drives, vacuum cleaners etc.

Roughness:	Roughness is hearing sensation related to rapid loudness modulation of a sound at modulation frequencies greater than 30Hz. These loudness modulations lead to an annoying "rough" sound.
Fluctuation Strength:	Fluctuation Strength is a hearing sensation related to slower loudness modulations of a sound (up to 30Hz). These slower modulations are discernible as individual events and lead to an unsteady or "fluctuating" sound.
Tonality:	Tonality is a hearing sensation related to the tonal prominence of a sound. Tonality is measured by comparing the relative energy of the tones in a signal to the total energy of the sound signal.
Stationary Loudness:	Stationary Loudness describes the human perception of sound volume for steady-state noises or noises that do not vary with time. Stationary Loudness takes masking effects into account which need to be considered for sounds composed of multiple components. Sound components with a high level may mask sound on a lower level which is close in frequency. Loudness is measured in Sone. 1 Sone is the loudness of a 1 kHz tone at 40dB.
Time-Varying Loudness:	Time-Varying Loudness describes the loudness of non-steady-state or impulsive noises. The algorithm applies temporal and spectral masking as well as temporal post-masking filters to calculate the Time-Varying Loudness in compliance with DIN 45631/A1.