ArtemiS SUITE
PRoject

Code 50110

APR 110
Playback Filters

The Playback Filters of ArtemiS SUITE enables time-domain signals to be filtered in real-time while playback. In addition, the Real-time Filtering for online filtering of binaural signals captured by SQuadriga III can be used in mobile operation.

OVERVIEW

APR 110
Playback Filters

Code 50110

The Playback Filters enable the interactive online manipulation of played back time signals and are available with the HEAD Navigator, in the Player, the Mark Analyzer, and the Compact Analysis Project (APR 100 is required), for example. Users can compile a custom filter bank consisting of any number of individual, customizable filters in serial or in parallel connection.

Another included tool, the Playback Spot for frequency spectra plotted versus time, can be used for selecting and playing distinct sound components intuitively.

With the Real-time Filtering, binaural signals present at a SQuadriga III can be analyzed online and interactively.

APR 110 also includes the stand-alone software application HEAD Audiometer as well as the Studio Control for use with the SQala jury testing software (APR 500 is required), for example.

KEY FEATURES

Easy and interactive real-time filtering of time signals in the Player, the Mark Analyzer, the Compact Analysis Project, ...

Filter bank with real-time filters
› Any number of customized serial and parallel IIR filters and a serial FIR filter
› Allpass, highpass, lowpass, ...
› Tracking filters (order filters)
› Frequency, amplification and bandwidth can be adjusted numerically or via the mouse
› Filter cursor in the Mark Analyzer for analysis with a frequency or order abscissa

Playback Spot provided by the Mark Analyzer (for frequency spectra plotted vs. time or vs. RPM)
› Easy creation of sample data from selected sound components

SQuadriga III based Real-time Filtering with four independently configurable filter sets for airborne and structure-borne signals

APPLICATIONS

› Interactive modifying of signals, e.g., airborne and structure-borne sound signals, for various sound design tasks
› Easy A/B comparisons
› Fast creation of modified files with different attenuations or absorptions, for example
› Efficient examination of noise phenomena
› Fast identification of disturbing noise phenomena by means of acoustic and visual support
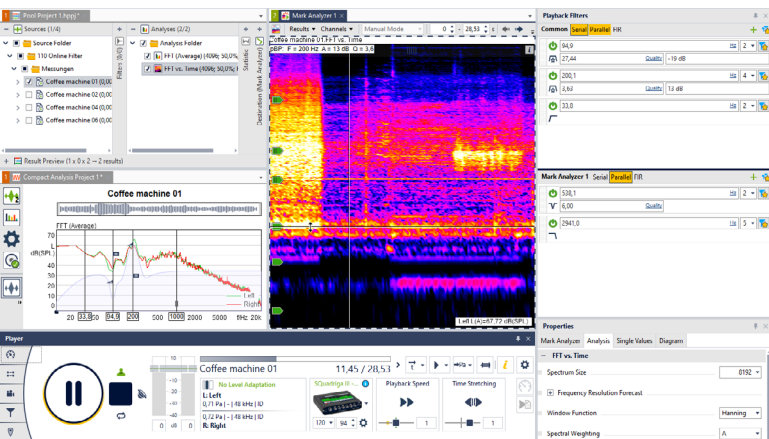
DETAILS

Playback Filters enable simple and interactive filtering. The filters are displayed as cursors in the diagrams, so that they can be positioned with the mouse in the desired positions.

Filter bank

When started for the first time, a filter bank with three preconfigured parametric band-pass filters is displayed initially, which can be freely modified or extended with additional filters. The available filter types are: allpass, lowpass, high-pass, bandstop, bandpass, parametric bandpass, parametric lowpass, parametric highpass, and tracking filters.

The number of filters that can be used in real-time is only limited by the available computing power.

In addition, each Mark Analyzer provides its own individual filter bank. This allows the acoustic comparisons between different sounds optimized with various filters, e.g., because they (the sounds) contain different kinds of interfering noise.
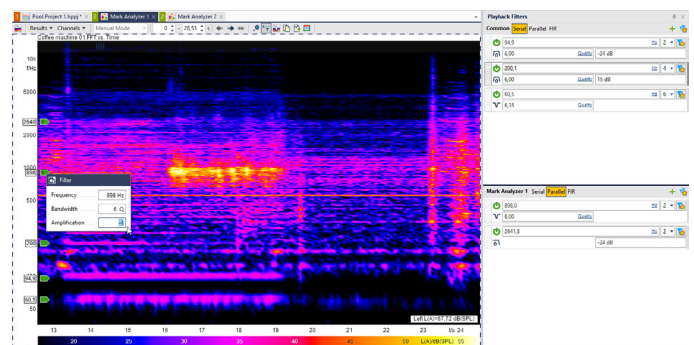
Filter cursor

In an analysis with a frequency or order abscissa, each filter is represented by a symbol at the position of its center (or cut-off) frequency in the Mark Analyzer. Moving the mouse pointer onto a filter invokes a tooltip containing all information about the filter (type, center or cut-off frequency, amplification, quality). The estimated effects optionally become visible in the diagram in real time by filter morphing. In 2D diagrams, the transfer function of the filter bank is displayed as well.

Playback Spot

The beginning and the end of a mark as well as the upper and lower cut-off frequencies can be adjusted with the mouse for a targeted selection and playback of a conspicuous noise component.
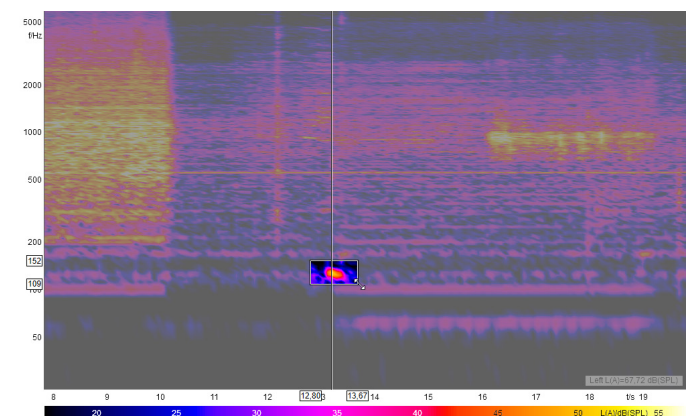
During playback, all components outside the selected area are removed by means of Player mark borders and a combination of a high-pass and a low-pass filter (6th order Bessel filters).

Filter bank with freely modified filters.

Filter cursor

Playback Spot

Real-time Filtering

Low latency Real-time Filtering enables an online analyzing of binaural signals with SQuadriga III. This system provides a comfortable and intuitive parametrization of suitable filters that can be processed on SQuadriga III directly.

Another benefit is that real-time filtering can be performed in a mobile setup and thus in a real-life environment. This and the possibility to modify sound signals in real time enable more authentic assessment results and significant time-saving compared to a laboratory environment.

Required:

› SQuadriga III (Code 3324)
  Mobile measurement system

Recommended

› RC X.1 (Code 9850)
  Remote control
› Headphones provided by HEAD acoustics
› HMS V (Code 1502)
  Artificial head measurement system

RC X.1 · HMS V · Headphones · Real-time Filtering · SQuadriga III
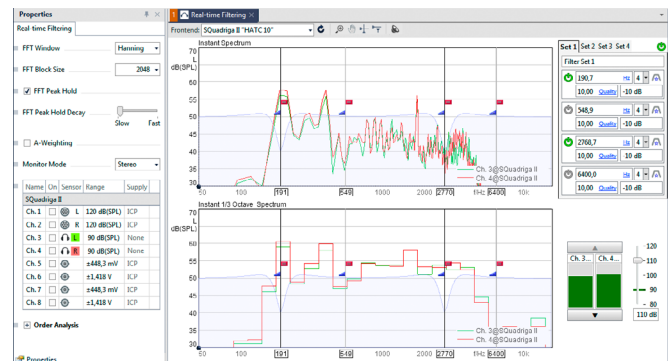
Real-time Filtering

Studio Control

Studio Control can be used for configuring playback devices from HEAD acoustics, e.g., in listening studios (using the SQala jury testing software).

› Operating modes:
  › Automated procedure with increasing levels (following DIN ISO 8253)
  › Automated "screening" with constant levels
  › Manual sound selection and playback control

HEAD Audiometer

The class 4 audiometer (according to DIN EN 60645) enables a quick and precise measurement of human hearing capabilities (not suitable for medical purposes).

› Selection of frequency ranges (125 Hz to 16 kHz) following DIN ISO 8253-1 and DIN ISO 389-5
› Pulsed or continuous sound playback according to DIN EN 60645

Required: APR 000 Framework (Code 50000)

HEAD acoustics

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