

DATA SHEET

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ArtemiS SUITE PRoject

Code 50210

APR 210 Signal Generator Project

The Signal Generator Project of ArtemiS SUITE enables the parametrizable generation of signals based on periodic and non-periodic basic waveforms, sweeps, mathematical functions, and existing recordings.

OVERVIEW

APR 210 Signal Generator Project

Code 50210

The Signal Generator Project is used to create simple or complex synthetic signals with configurable frequency and reference quantity on the computer. A range of predefined, parameterizable functions as well as editable mathematical formulas are provided. Furthermore, signals and signal sequences can be concatenated into new files with any order and length for further processing.

The user-friendly interface makes it easy to generate excitation signals, e.g., for the determination of transfer functions, stimuli for fundamental psychoacoustic research, or other "advanced" acoustic test signals.

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KEY FEATURES

Generating artificial and other signals from

- periodic or non-periodic basic wave forms, e.g., sweeps
- > mathematical functions
- > existing recordings

Signal generation

- Predefined, parameterizable functions, such as sine, sweep, pseudo noise, random noise, ...
- Configuration with mathematical functions and configurable variables
- > Definition of custom variables

Editing functions

- Custom concatenation of artificial and recorded signals or signal sections
- Free hand (arbitrary) mode for manually editing of curves

Flexibly configurable physical quantities, measurement units, amplitudes, sampling rates, signal levels, ...

Unlimited number and size of generated channels

APPLICATIONS

Creating and editing of measurement and test signals for

- determination of transfer functions with shakers or speakers
- sound design
- > troubleshooting
- > fundamental psychoacoustic research
- > closer examination of acoustic phenomena
- listening tests
- > .

DETAILS

The Signal Generator Project combines easy handling with comprehensive functionality. Any number of channels can be created and each channel can be configured independently of the others.

Easy operation

All operations are performed in a single interface, enabling users, for example, to quickly create a sine tone with a specific frequency and amplitude or a run-up across a specific frequency range.

Intuitive editing

Simply and effectively, users can edit any signal range of one or more channels manually. There are various tools available, such as mute, interpolate, and smooth. Furthermore, the free hand (arbitrary) mode enables users to change the whole curve intuitively in the selected time range, just like in a graphics program.

Concatenating and editing multiple signal sections is very easy, too. Users can combine any number of recordings and artificial signals into a new signal and rearrange the order of the components according to their needs via drag-and-drop.

In addition, the Calculated Channels function enables users to offset any number of channels with each other in order to create a new channel. With the help of mathematical expressions, users can define, how existing channels are to be offset against each other.

Individual channel properties, such as sampling rate, physical quantity, measurement range, etc. can be configured conveniently. Furthermore, it is possible to cross-fade between individual signal blocks, to insert pauses, etc.

Generating signals

Based on a periodic or non-periodic basic waveform, a sweep or a mathematical function, for example, users can use it to generate a test signal such as a pure sine tone with a certain frequency and amplitude, or to generate a run-up over a certain frequency range in a certain time.



In the diagram, all channels can be post-processed manually. Using the free hand (arbitrary) mode, users can redraw the whole curve graphically with a pen.



Example of a mathematical formula in a Signal Generator Project: The time-domain curve and an FFT vs. Time analysis are displayed immediately.

A special feature is the powerful formula function, which enables signals to be generated from mathematical formulas, e.g., in order to add an artificial engine order to an existing recording.

- > Predefined, parameterizable functions
 - Sine, sweep, switched sine, stepped sweep, rectangle, triangle, pseudo noise, random noise, AM/FM, Fourier, RPM sweep
- > Mathematical formulas
 - Configuration with mathematical functions and configurable variables
 - Definition of custom variables, e.g., from RPM data in a file or an existing channel in the Signal Generator Project
 - Automatic error display

Snapshot function

For visual control, a diagram and an FFT spectrogram are available, which provide various cursor modes, color selection for the channels, and shifting or zooming of the display area.

Playback

Acoustic control of the current signal chain and configuration is possible at any time using the Player.

Storing

Not only the result, but also the entire signal collection and configuration can be saved. This enables users to reload existing projects at any time and quickly adapt them to new conditions.

Required: APR Framework (Code 50000) and/or: HEAD System Integration and Extension (ASX) programming interfaces

With the Calculated Channels function, users can switch between several source channels to evaluate the effects in the channel preview immediately.



In order to save intermediate results, the snapshot function can be used to create an image of the respective channel as new block in a new channel.



Signal blocks and channels can be positioned exactly with the help of markers.



Contact Information

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