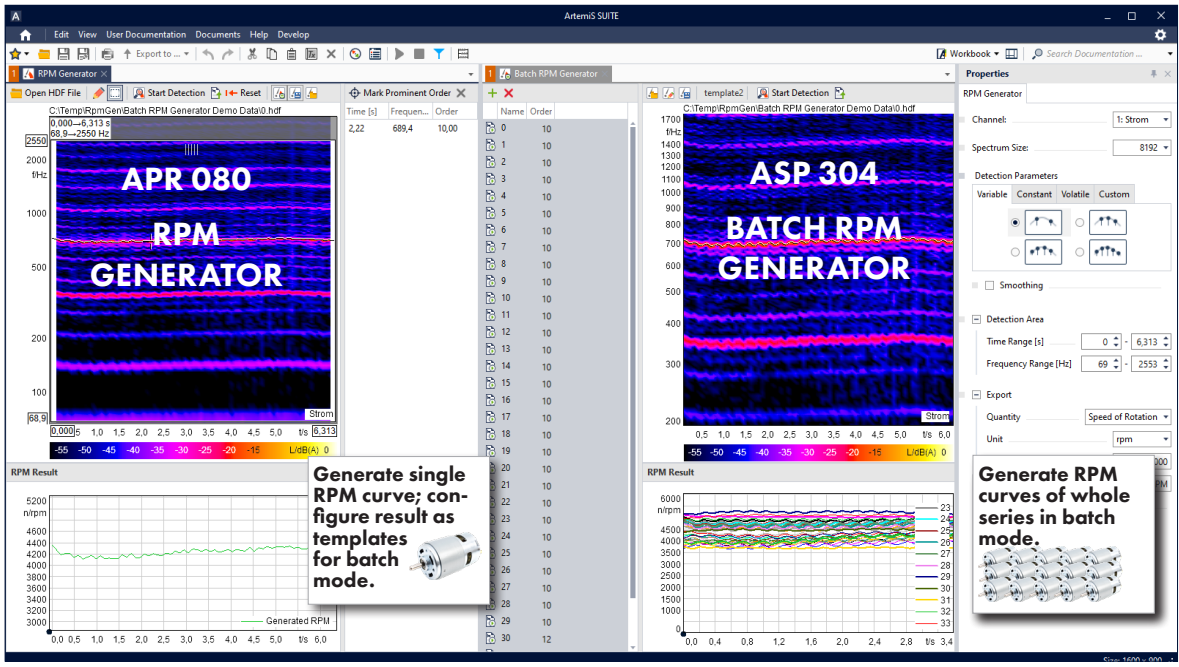
DATA SHEET



ArtemiS SUITE
PRoject

Code 50080

APR 080 RPM Generator

Based on an algorithm developed by HEAD acoustics, the RPM Generator of ArtemiS SUITE enables the generation of analog reference quantity channels from simple recordings, e.g., of small engines or turbochargers for which the mechanical acquisition of the revolution speed is difficult or impossible.

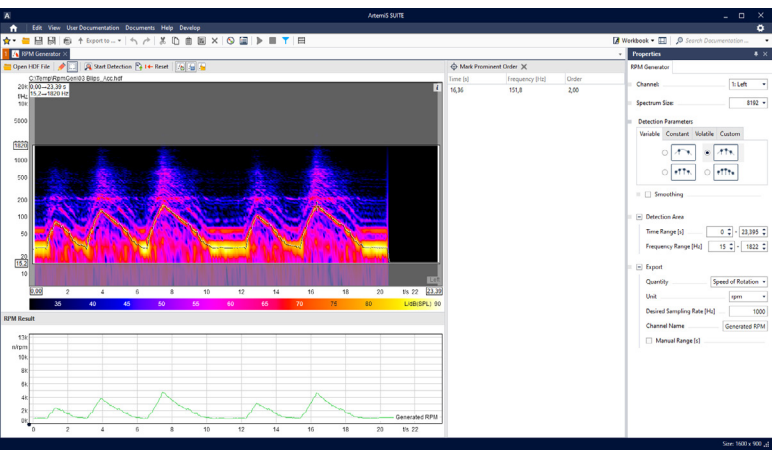
OVERVIEW

APR 080
RPM Generator

Code 50080

For generating missing RPM curves, the RPM Generator provides a secure and easy-to-use solution. The algorithm enables users to generate missing RPM curves from order curves with only little effort and to add them as new analog channels automatically not only as RPM, but also as frequency, or as speed.

When measuring rotating objects such as small motors or turbochargers, it is often not possible to measure the revolution speed. In such cases, the RPM Generator enables users to generate RPM curves, e.g., from structure-borne noise signals, and to embed them in the recording as new channels with simple means and a short investment of time. This tool can also be used in cases where the original RPM recordings turn out to be corrupted.



KEY FEATURES

Generating RPM data from audio, vibration, current, or other signals

High accuracy thanks to a sophisticated algorithm

Various settings for determining RPM curves (e.g., variable, constant, or volatile revolution speed)

Optimization of results by using multiple reference points or smoothing

Preview window for immediate verification of results

Manual drawing of curves with the pen tool

The RPM Generator can be extended with the Batch RPM Generator (ASP 304 is required), apply a template created with the RPM Generator for similar recordings

The Batch RPM Generator includes:

› The batch generation of RPM curves for a large number of similar measurements at the touch of a button
› The use of the Batch RPM Generator embedded in Automation Projects (APR 050 is required)

APPLICATIONS

Intuitive generation of RPM curves from significant order curves for:

› revolution speed acquisitions where an RPM sensor cannot be used or is difficult to use, e.g., in case of small electrical motors or turbochargers
› incorrect revolution speed acquisitions
› imported data, e.g., from WAV or MP3 files

DETAILS

Easy operation

For generating RPM curves it is sufficient to select a visible order curve in the diagram with a single mouse click and to specify the corresponding order. By selecting a suitable parameter preset with more or less reference points or by limiting the frequency or the time range in the diagram, the accuracy of the generated RPM curve can be optimized.

Several parameter presets are available:

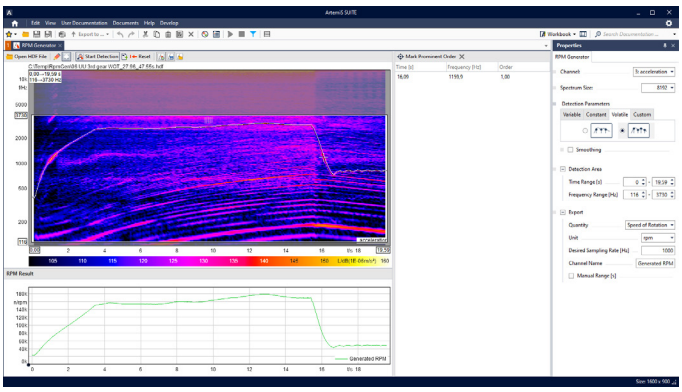
- Variable: for run-ups, coast downs, and combined run-ups/coast downs
- Constant: for all constant revolution speeds where the focus is not on occurring physical variations
- Volatile: for RPM curves with very strong variations across a wide frequency range
- Custom: for custom parameter configurations

The RPM Generator displays the estimated RPM curve in the spectrogram. In addition, the RPM vs. Time analysis is displayed in a separate diagram, providing the user with immediate visual quality control.

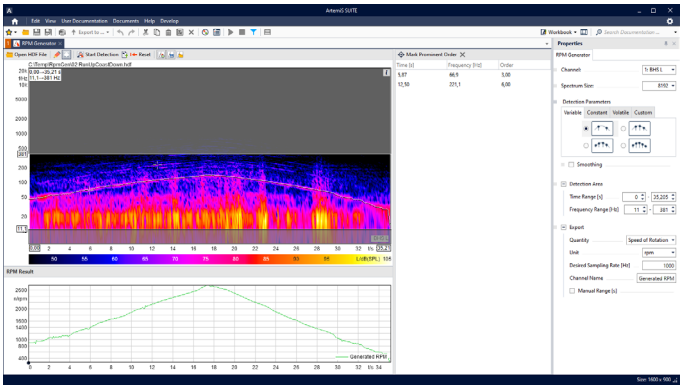
The revolution speed determination can be carried out manually, too. This mode can be used, for example, to manually adjust particularly critical areas for which the automatic system has delivered ambiguous results. Via the pen tool, users may draw the curve step-by-step or continuously in the FFT vs. Time representation as well as in the RPM vs. Time diagram.

In order to achieve better results in case of insufficient order curves, additional orders can be identified. The algorithm then examines them together with the dominant order. In case of complex order curves (of turbochargers, for example), the revolution speed can be determined separately for individual signal sections. The RPM Generator automatically combines the individual sections into the resulting RPM curve.

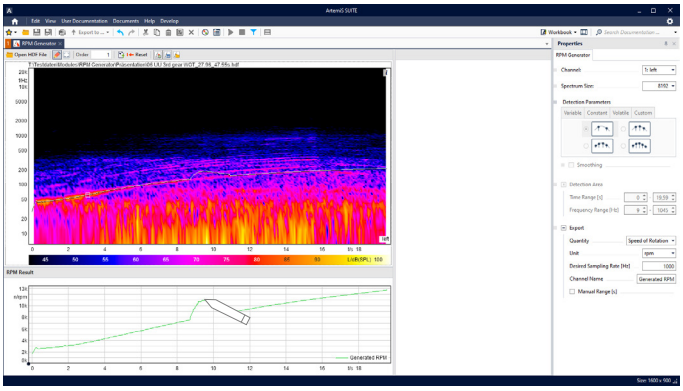
The generated RPM curve can be saved along with the (unchanged) input data as an additional channel in the HDF file. Alternatively, users can save only a specific part by entering the start and end positions manually or by moving the limits displayed in the bottom diagram with the mouse.



For the measurement of rotating objects such as small engines or turbochargers, the mechanical acquisition of the revolution speed often turns out to be tricky or it is not possible at all. The RPM Generator enables the extraction of this information from the normal measurement signals.



On each of these tabs (variable, constant, or volatile), users can choose variants, which have proven themselves in extensive test series to be especially effective and which should cover the majority of use cases.



In addition to the automatic RPM determination, manual drawing with the pen tool is available. Users can draw a new curve and save the result as a new RPM curve.

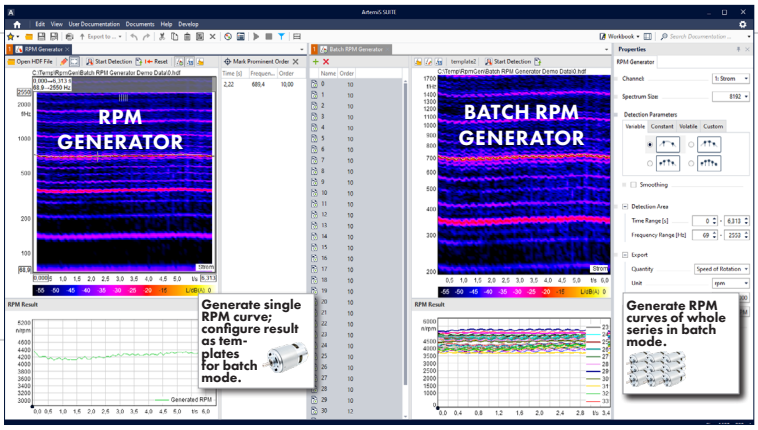
RPM GENERATOR AND BATCH RPM GENERATOR (ASP 304)

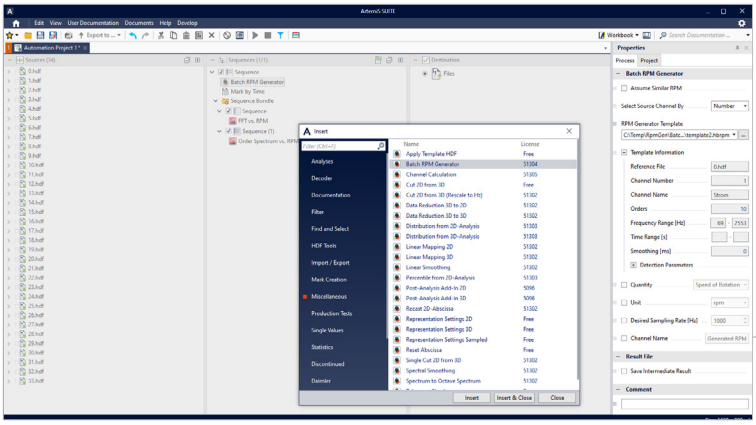
While the RPM Generator generates RPM curves for a single measurement at a time, the Batch RPM Generator (ASP 304 is required) can be applied to a larger number of measurements simultaneously. In addition, the Batch RPM Generator can be used for Automation Projects (ARP 050 is required) to embed the batch RPM generation task into the measurement, analysis, and processing tasks, which are performed without user interaction. The Batch RPM Generator enables manual adjustments of various parameters.

RPM GENERATOR (APR 080)

The RPM Generator enables to generate of RPM curves and to store the result as a template for further similar measurements.

Templates can be used for the Batch RPM Generator, too (ASP 304 is required).





BATCH RPM GENERATOR (ASP 304)

The Batch RPM Generator requires RPM Generator templates to generate RPM curves for many similar measurements simultaneously.

To use existing templates with the Batch RPM Generator, only a license for ASP 304 is required.

Batch RPM Generator embedded in an Automation Project

RPM Generator templates can also be used to integrate RPM generation in batch processing mode into automated processes of an Automation Project (a license for ARP 050 is required).

To run existing templates in an Automation Project, licenses for ASP 304 and APR 050 are required.

Required: APR Framework (Code 50000)

HEAD acoustics

Contact Information

Ebertstrasse 30a
52134 Herzogenrath, Germany
Phone: +49 (0) 2407 577-0
E-Mail: sales@head-acoustics.com
Website: www.head-acoustics.com