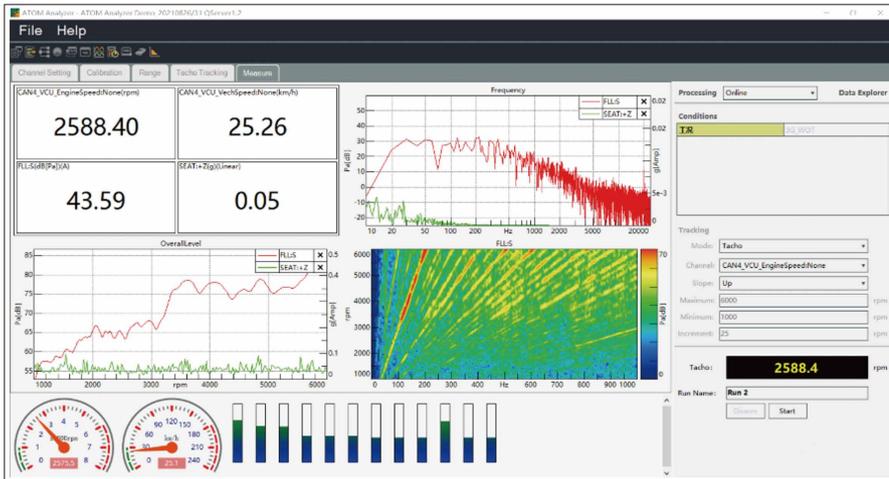


ATOM-Analyzer

Overview:

ATOM Analyzer is a powerful ac-oustic and vibration data acquisition and analysis software with unique test workflow interface, supporting multi-channels recording, online data monitoring and analysis. Based on test data management, data accumulation can be completed at the same time as daily NVH data recording and analysis. It makes test work more convenient and efficiency. Test data communication is smoother, greatly improve user's NVH test equipment use efficiency and speed up the product development process.



Features

Basic platform for NVH testing, analysis and data management

- ◆ Compatible with various data formats of mainstream NVH test systems
- ◆ Real time data sharing
- ◆ Integrate and utilize all data acquisition systems of the company through data import and export

Combining NVH testing work with data management

- ◆ Standardized management of test object, field, working condition, and measuring point through database interfaces
- ◆ Each data has clear attribute information
- ◆ The test data is stored according to the product development process
- ◆ Accumulate massive amounts of data while testing

Feature-rich data display

- ◆ Convenient and smooth display of various types of data
- ◆ Integrate professional gadgets for analysis, such as adding hand-drawn lines, setting target lines, slicing Colormap, judging target achievement, and calculating dB difference

Professional data calculation

- ◆ Basic calculation functions, such as spectrum, sound pressure level, order spectrum, time domain calculation, and conventional psychoacoustic calculation
- ◆ Advanced compute functions, such as correlation, coherence, transfer function, cepstrum and wavelet analysis
- ◆ Professional calculation function, such as ride comfort calculation, torsional vibration calculation,
- ◆ Advanced psychoacoustic calculation, such as loudness spectrum and sharpness spectrum

Efficient data processing tools

- ◆ Time domain data can be played back and filtered
- ◆ Automatically generate reports from test report templates
- ◆ Easily view ASAM, HDF, Wave, atom data from my computer
- ◆ Quickly view and compare data through Page templates

Number	Module	Description
1	ATOM Analyzer	ATOM Analyzer basic function module
2	ATOM ANL01	The basic module of vibration and noise signal acquisition
3	ATOM ANL02	Online calculation module (requires ANL01 and ANL11 modules), online analysis for the collected signals
4	ATOM ANL03	Sound power test module (requires ANL01 module), supports ISO 3744, ISO 3745, ISO 3746 standards
5	ATOM ANL04	FRF test module (for hammer test, ANL01 module is required)
6	ATOM ANL11	Basic analysis module, support post-processing from time tracking or tacho tracking signal
7	ATOM ANL13	Advanced Compute Module (requires ANL11 module)
8	ATOM ANL14	NVH Professional Compute Module (Requires ANL11 Module)
9	ATOM ANL15	Advanced psychoacoustic compute module (requires ANL11 module)
10	ATOM ANL16	Automatic report module
11	ATOM ANL17	Time domain playback and filter module (frequency filter, order filter, notch filter)
12	ATOM ANL99	Database interface (providing data management functions requires ATOM Basic and ATOM Administration Tool modules)
13	SW CUST	User-defined function development

ATOM Analyzer 5.0

Function Module-Content Overview

ATOM Analyzer: Basic function module

- ◆ ATOM Analyzer basic function module
- ◆ Integrate a variety of data presentation forms and analysis functions, to provide presentation of different types of data such as charts, curves, octaves, Colormaps, and modal shapes
- ◆ Provides convenient gadgets such as adding hand-drawn lines, setting target lines, averaging, quantile lines, dB difference, calculus, cursor slicing, target achievement judgment, etc.
- ◆ Provide a variety of setting options, users can easily and flexibly adjust the display mode to get the desired data presentation effect
- ◆ Support adding single cursor, double cursor, peak/valley cursor, order cursor, harmonic cursor
- ◆ Support the function of live map, you can edit the copied live map in Word and PPT
- ◆ Support setting display format template
- ◆ Support HDF, ASAM format data viewing and import
- ◆ support the export of time domain data in ASAM, wave, Excel and TXT formats
- ◆ support the export of frequency response data to UNV format data
- ◆ support the statistics of database data entries
- ◆ Support data query and group display
- ◆ Supports putting data in different directories into the data cache for batch processing

ATOM ANL01: Basic module for vibration and noise signal acquisition

- ◆ Combine NVH test work with data management
- ◆ Test and online calculation data are directly stored in the database
- ◆ Support ZODIAC DataRec4 series data acquisition
- ◆ Support SINUS Appollo series data acquisition
- ◆ Support Mecalc Quantus series data acquisition
- ◆ channel setting: the sensor library and system measuring point library can be used for channel setting
- ◆ CAN/CANFD data acquisition
- ◆ Read TEDS
- ◆ Sensor sensitivity calibration
- ◆ Automatic range setting
- ◆ Time, tacho and other channel trigger tests
- ◆ Custom channel online monitoring
- ◆ save test setting parameters
- ◆ Simultaneous comparative analysis of multiple sets of data

ATOM ANL02: Online Calculation Module (Requires ANL01 and ANL11 modules)

- ◆ Supports online and delayed data processing for time tracking tests and rotational speed tracking tests, including
- ◆ Spectrum calculation and analysis, including linear auto-power spectrum, cross-power spectrum, spectrum averaging, 1/n octave, frequency slice, order slice, order spectrum analysis, auto-spectrum
- ◆ Sound pressure level analysis based on spectrum calculation
- ◆ Psychoacoustic calculation, including loudness (ISO532B), sharpness, Close AI, Open AI
- ◆ System analysis: auto-correlation, cross-correlation, coherence function, transfer function analysis and post-processing data are stored synchronously
- ◆ Quick comparison between arrays, and supports calculation of upper envelope, lower envelope, and average line

ATOM ANL03: Sound Power Test Module

- ◆ Support sound power test standard ISO 3744, ISO 3745, ISO 3746
- ◆ Support test envelope modeling
- ◆ Support background noise test
- ◆ Correction value setting
- ◆ Online monitoring of the sound pressure level of

each channel and real-time display of the sound power level and 1/3 octave sound power spectrum

- ◆ Online analysis of collected signals, real-time calculation of sound power level, 1/3 octave sound power spectrum, spectrum of each channel, sound pressure level of each channel

ATOM ANL04: FRF Test Module

- ◆ Support frequency response function test with roving method
- ◆ Channel trigger setting, bandwidth setting and window function setting are available
- ◆ Support hammer method and sensor method
- ◆ Support to recognize overload or double-click, and automatically refuse to save

- ◆ Online calculation of power spectral density, coherence function, frequency response function, dynamic stiffness
- ◆ It can load geometric model files in various formats such as*.unv and*.xml, and perform functions such as channel setting, measuring point browsing and inspection, etc.

ATOM ANL11: Basic Analysis Module

- ◆ support post-processing of time tracking signal and tacho tracking signal
- ◆ time domain signal processing: resampling, filtering, signal interception
- ◆ Spectrum calculation and analysis, including linear auto power spectrum, cross power spectrum, spectrum averaging, 1/n octave, frequency slice, order slice, order spectrum analysis, auto spectrum, PSD
- ◆ Sound pressure level analysis, including time-weighted calculation analysis and spectrum-based calculation analysis

- ◆ Time domain calculation and analysis, including filtering calculation, vector synthesis, Hilbert envelope, channel calculations with four fundamental rules, rotational speed generation calculation
- ◆ Psychoacoustic calculation, including loudness (ISO532B, ISO532-1), sharpness, Close AI, Open AI
- ◆ Support time domain playback, support binaural playback, can view the Colormap and spectrum curve of playback data, and set relevant analysis parameters

ATOM ANL13: Advanced Compute Module

- ◆ cepstrum analysis
- ◆ wavelet analysis

- ◆ System analysis, including autocorrelation, cross-correlation, coherence function, transfer function analysis

ATOM ANL14: NVH Professional Compute Module

- ◆ Support ride comfort calculation
- ◆ Torsional vibration calculation, adaptive correction of pulse signals, including signal correction processing

- for missing teeth and code bands
- ◆ Support sound power data calculation(ISO 3744, ISO 3745)

ATOM ANL15: Advanced Psychoacoustic Computing Module

- ◆ Specific Loudness

ATOM ANL16: Automatic report module

- ◆ Generate Word \PPT report based on Page
- ◆ Generate test report based on test report template (customized)

ATOM ANL17: Time Domain Playback Filter Module

- ◆ low pass, high pass, band-pass, band stop, order pass and order stop filters can be added for playback
- ◆ use the mouse to quickly change the parameters of the filter (such as different types of filter switching, filter frequency, filter order, filter switch, etc.)
- ◆ export filtered data to wave

ATOM ANL99: Database Interface

- ◆ Provide data management functions, seamlessly interface with the server version, and read and call information such as test items, test object, field, working condition, measurement point, and sensors through a file format.

SW CUST: User-defined Function Development

According to the user's professional field and organizational structure, provide the service of building the database and provide the service of professional on-site data import. Provide customized function development according to different needs of users. Such as customized data format import, customized one-dimensional data template import (xlsx / XLS data), customized personalized analysis tools and customized professional algorithms.

Recommended system configuration requirements

- ◆ System: Windows10 Professional/Enterprise/Ultimate 64-bit and above
- ◆ Memory: 8GB and above
- ◆ CPU: 4 cores and above
- ◆ Graphics Card: NVIDIA GeForce GT730 or above
- ◆ Hard disk: 1T or more, the client computer requires system disk free space greater than 5G
- ◆ DirectX version: 9.0 and above
- ◆ Microsoft Office 2016

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If there are changes in product features, the actual shall prevail and the explanation will not be changed.