

ArtemiS SUITE
Signal Processing

Code 51303

ASP 303 Statistics

Statistics of ArtemiS SUITE offers several statistical functions, such as Min, Max, Average, Sum, Median, to further process input signals, analysis results, etc.

OVERVIEW

ASP 303 Statistics

Code 51303

ASP 303 provides various statistical functions like average and summation. The statistical processing can be applied to multiple channels within a file, multiple channels of the same type from multiple files, or multiple folders containing several input data files.

In addition, further statistical methods, such as percentile or distribution, are available. The results can be displayed in diagrams or, for single values, determined as a value.

Name	License
Channel Difference 2D	51303
Channel Difference 3D	51303
Channel Difference Sampled	51303
Channel Statistic 2D	51303
Channel Statistic 3D	51303
Channel Statistic Sampled	51303
File Difference 2D	51303
File Difference 3D	51303
File Difference Sampled	51303
File Statistic 2D	51303
File Statistic 3D	51303
File Statistic Sampled	51303
Folder Statistic	51303
Distribution from 2D-Analysis	51303
Distribution from 3D-Analysis	51303
Percentile from 2D-Analysis	51303
Distribution from Recording	51303
Percentile from Recording	51303

KEY FEATURES

Statistical functions:

- › Channel Statistic: 2D, 3D, Sampled
- › File Statistic: 2D, 3D, Sampled
- › Folder Statistic
- › Channel Difference: 2D, 3D, Sampled
- › File Difference: 2D, 3D, Sampled

Distribution, Percentile analyses and functions:

- › Distribution from: 2D, 3D Analysis, Recording
- › Percentile from 2D Analysis, Recording

Fast calculation of even large data sets thanks to modern processing architecture

For all processes, it is possible to define very flexibly which files or channels are to be processed into one result

Wide range of settings for statistical processing of single values

All statistical functions can be used in Pool Projects (require APR 010) and Automation Projects (APR 050 is required). Some statistical functions are available in Standardized Test Projects (APR 220 is required), Metric Projects (APR 570 is required), and Calculation Projects (included in APR 000).

APPLICATIONS

- › Statistical evaluation of a large amount of measurements
- › Quick overview about the quality of measurement results

DETAILS

Statistical methods

Users can conveniently choose to use statistical functions to calculate channels from one data set, or offset multiple datasets against each other.

Channel Statistic processes the channels within a file. That means, for example, from three files with two channels, three result files with one channel each are generated.

Using File Statistic, the channels of several files with the same structure are processed together. For example, one result file with two channels is generated from three files with two channels.

Files with the same name contained in respective folders are offset against each other with Folder Statistic. For example, three input folders with four two-channel files produce one folder with four two-channel results.

Channel Difference and File Difference offer different settings depending on how differences are to be calculated such as Operand Mode: First input - Other, Even - Odd, ... – Calculation Mode: Auto, Lin, dB – Time Abscissa Alignment: Date of Recording, Start of Abscissa, Start of Data.

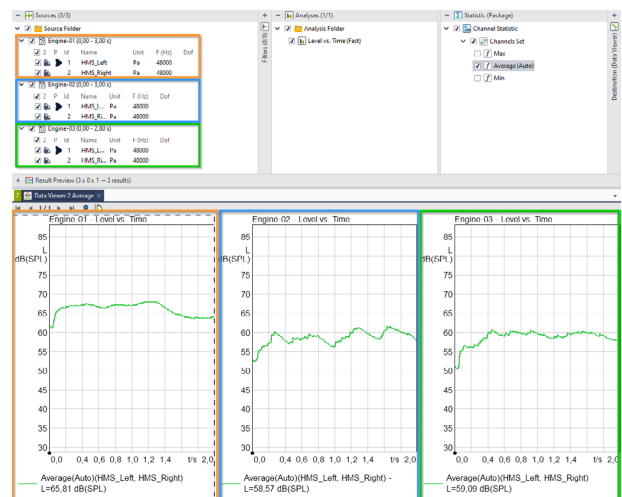
Aggregation Function

This parameter provides the statistical functions Average, Complex Average, Sum, Median, Max, Min, Quantile, $\mu + n * \text{Sigma}$.

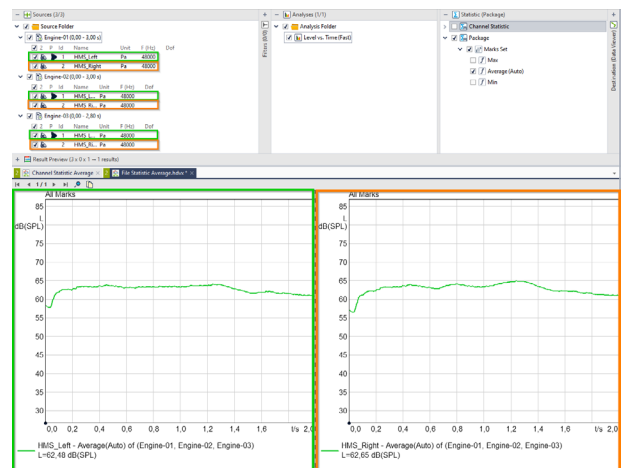
Time Abscissa Alignment

This parameter enables to process the specification of how the channels are to be aligned with each other on the abscissa: Date of Recording, Start of Abscissa, or Start of Data.

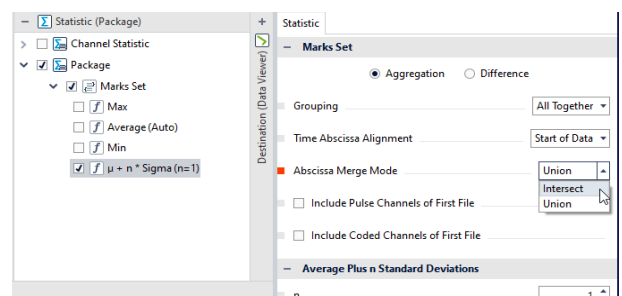
The Abscissa Merge Mode can be used to specify whether the calculation is performed using only the areas in which all input channels have values (Intersect), or whether all areas of all input channels are to be used for the calculation of the statistics.



Channel Statistic



File Statistic



Aggregation Functions

Single Values

Various settings can be used for the statistical evaluation of single values, e.g., from analysis results.

Available options are a direct evaluation (Min, Max, Average, Quantile) or a recalculation after a statistical application.

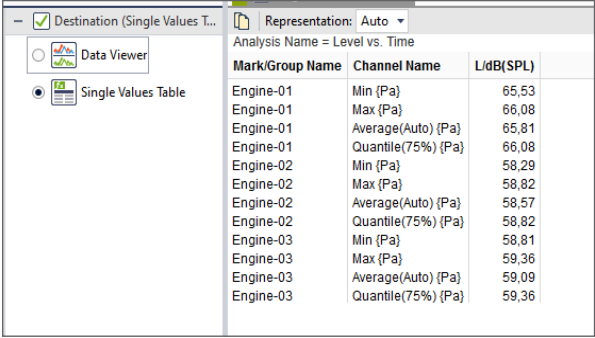
Channel Grouping

Using Channel Grouping, the data can be assembled according to individual criteria. Users can select whether all channels are to be combined based on the same physical unit or quantity. Files can be assembled by Cuts, Source, Group Size, Documentation, or All Together.

If data contain measurement points with degree of freedom information, all channels belonging to a measurement point or all channels with the same direction (e.g., all channels with Z direction) can be assembled.

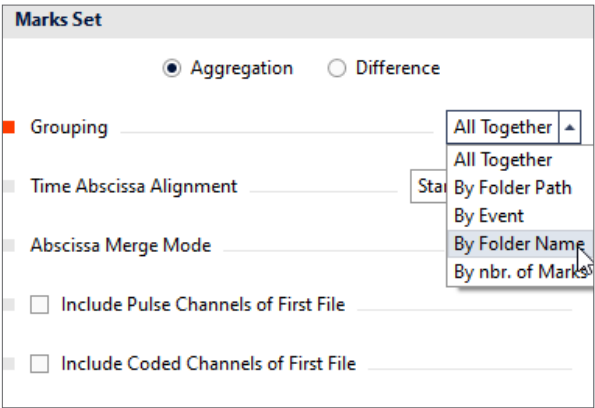
Percentile and Distribution

Clear setting options are available for calculating the Percentile of a 2D analysis and the Distribution of a 2D or 3D Analysis. In addition, the functions Percentile from Recording and Distribution from Recording can be used to examine the time signal statistically. Single values can be determined for all functions separately.



Mark/Group Name	Channel Name	LdB(SPL)
Engine-01	Min (Pa)	65,53
Engine-01	Max (Pa)	66,08
Engine-01	Average(Auto) (Pa)	65,81
Engine-01	Quantile(75%) (Pa)	66,08
Engine-02	Min (Pa)	58,29
Engine-02	Max (Pa)	58,82
Engine-02	Average(Auto) (Pa)	58,57
Engine-02	Quantile(75%) (Pa)	58,82
Engine-03	Min (Pa)	58,81
Engine-03	Max (Pa)	59,36
Engine-03	Average(Auto) (Pa)	59,09
Engine-03	Quantile(75%) (Pa)	59,36

Single Values



Marks Set

☒ Aggregation ☐ Difference

Grouping All Together

Time Abscissa Alignment Star

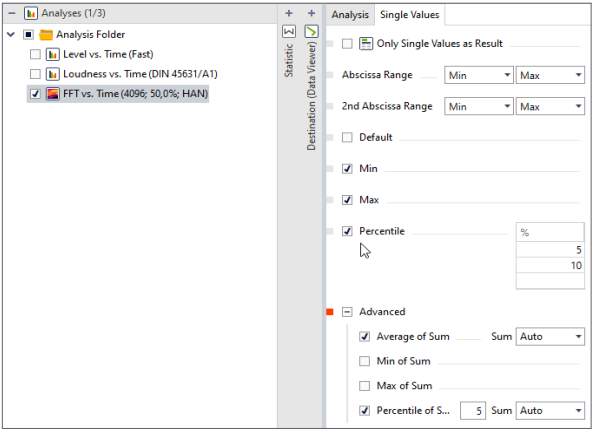
Abscissa Merge Mode

☐ Include Pulse Channels of First File

☐ Include Coded Channels of First File

Dropdown menu options: All Together, All Together, By Folder Path, By Event, By Folder Name, By nbr. of Marks

Channel Grouping



Analysis Single Values

☐ Only Single Values as Result

Abscissa Range: Min Max

2nd Abscissa Range: Min Max

☐ Default

☒ Min

☒ Max

☒ Percentile %

☒ Advanced

☒ Average of Sum Sum Auto

☐ Min of Sum

☐ Max of Sum

☒ Percentile of S... 5 Sum Auto

Percentile

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



Contact Information

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