Programmable Post-Processing (PPP)

S53

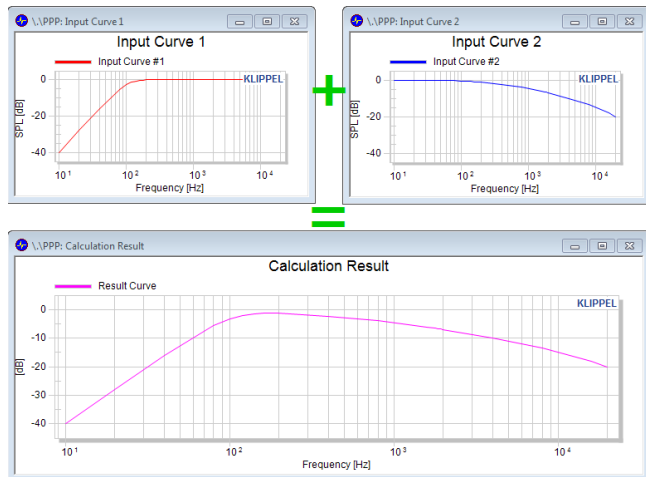Software of the KLIPPEL SYSTEM (Document Revision 1.1)

FEATURES

- User defined post-processing
- Automatic import of input curves and single values
- Easy and fast calculations possible
- Many different user templates available for interesting applications

BENEFITS

- Integration in dB-Lab
- Easy extension of standard functionality

DESCRIPTION

This tool is dedicated to any post-processing of measurement results in dB-Lab. The math / equation for this post-processing can be entered by the user and is fully flexible. The input parameters (curves and single values) can be either entered by hand or imported automatically from any other dB-Lab operation within the same dB-Lab object.

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CONTENT

1 Requirements

1.1 Software

dB-Lab (version 210.124 or higher)

1.2 License

PPP Software Module*

* There are a few applications which do not require a PPP license. These applications are saved as object and operation templates in dB-Lab. The PPP license is required for user-programmable PPP operations only.

2 Setup

2.1 Inputs

Parameter	Format
0…4 curve inputs	2 or 3 column matrix 　　column 1: x-axis 　　column 2: y-axis magnitude 　　column 3: y-axis phase (optional)
0…2 single value inputs	numerical value (also matrices allowed)
General	This module uses the KLIPPEL Automation Interface for getting and setting the curves and single values from and to other dB-Lab operations. Since the KLIPPEL Automation Interface is also available from other programming languages (e.g. Python, C#, Java) you may also create your own post-processing or automated measurement report, etc. Please refer to the KLIPPEL Automation Documentation which can be found on the software CD that comes with your KLIPPEL system.

2.2 Calculation / Outputs

Parameter	Format
0…3 curve results / calculations	SciLab expression as single-line string or multi-line string. Result must be a 1 or 2 column vector of y-axis values: 　　column 1: real part of calculation result 　　column 2: imaginary part (optional) The x-axis information is automatically extracted from the input curves and available as the interpolated x-axis of all input curves in the variable X.
0…3 single value results / calculations	SciLab expression as single string or multi-line string. Results must be a single value (may be complex) or a string.
General	All input curves and single values are available as variables with their according names ("C1"…"C4", "V1", "V2").

2.3 Display Parameters

Each output graph can be configured separately with a title and different settings for the x- and y-axis. Additionally the curve results can be configured with names, colors and comments for individual visualization. A name, comment and unit can be defined for each single value result.

3 Results

Curves

Up to 3 graph windows may be configured regarding the title, the axis labels and scaling. Additionally, the y-axis may be configured with a minimum and maximum value (to avoid automatic scaling of this axis).

Each result curve can be routed to one of the graph windows (all together in one window or each in a separate window).
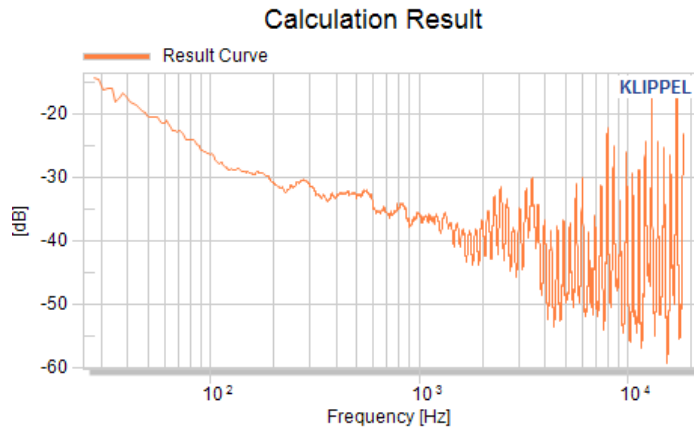
Single Values

Each single value result will be shown in a result table. A separate unit and comment may be defined for each single value.

Results

Result Name	Value	Unit	Comment
RMS value	0.687	V	Root Mean Square value of input spectrum

4 Applications

General Scheme

The PPP module is designed for any mathematical post-processing of measurement results in dB-Lab. The input (curves and single values) can be imported automatically from any dB-Lab operation within the same dB-Lab object. Additionally the calculated results may be exported to the setup of any other dB-Lab operation.

Copy & Paste

An easy way of getting input data is to copy any curve from another operation and pasting it directly into the curve input of the PPP operation. Single values may be copied the same way or entered manually.

Automatic import / export from / to other dB-Lab operation	

A much more comfortable way of post-processing is the automatic import of curves and single values from other dB-Lab operations within the same dB-Lab object. Additionally, this offers the possibility to run automatic batch processing in dB-Lab without copying any curves and values manually in between In the above example the setup parameter „AmpRmsTRF" will be imported from the pre-measurement as single value „V1".

The results can also be automatically exported to the setup of other operations changing their setup accordingly. In the above example the calculation result will be exported to the final TRF measurement as parameter „AmpRmsTRF" (see also AN41 for this example).

NOTE: When changing any setup parameter of other operations you may loose measurement results of this operation without any warning. Be careful when using this option.

5   Restrictions

Automatic export to other dB-Lab operations	It is not possible to export curves to charts of other dB-Lab operations than the currently used PPP operation. Only setup parameters of measurement operations within the same object are allowed to be changed via the automatic export.
	If you want to show curves from different windows within the same chart, you have to do this within the result windows of the PPP operation.

6   References

6.1 Manuals	Programmable Post-Processing, Manual of the KLIPPEL Analyzer system
6.2 Application Notes	Measurement at defined terminal voltage – AN41

Find explanations for symbols at:

http://www.klippel.de/know-how/literature.html

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