

## audioTester V3.0 Features



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## General

This Document will show all possibilities of the audioTester.

Details to the measurements you will find in the detailed help system.

## Spectral Analyses

- FFT Point from 64 til 1048576
- 9 dif. FFT Windows (van Hann, Blackman ...)
- Averaging
- available in 2D and 3D
- Measuring with the mouse cursor in diagram (see also in diagram)
- Wiring diagrams, tips and tricks in the help system
- Free configured time domain filter (only for licensed users)

## Measuring Values

With the spectral analyses there are many measurements available

- Level values
- Distortion values
- Signal to Noise (S/N Ratio)
- Wow & Flutter measurement

### Level measurement units

- dBFS
- dBV \*
- dBu \*
- dBm \*
- dB SPL \*
- Pa \*
- mV \*
- Sone (coming soon) \*

\* Calibration necessary

All measurements with 16 dif. filter ( A-B-C weighting, CCIR ARM...)

Adjustable measuring band width

Results are shown below the diagram

The output text can be scaled in different text sizes. The details of the text can be hide.

## Distortion measurement

- THD+Noise
- single harmonics
- Automaticly or manual fundation frequency settings
- Intermodulations distortions
- S/N Ratio

Adjustable measuring band width

Results are shown below the diagram

All measurements with 16 dif. filter Messungen ( A-B-C weighting, CCIR ARM...)

## Sweep measurement

- Adjustable sweep step count
- Adjustable digitally output level
- Frequency generating lin or log.
- Adjustable frequency range
- Phase measurement
- Single or continued measurement
- Adjustable pause between measurement possible
- Asynchron measurement for devices which have no input for test signals. MP3 Player, iPhone, car systems ....
- Free configured time domain filter (only for licensed users)
- Wiring diagrams, tips and tricks in the help system

## **Impedance measurement**

- Input of the serial resistor
- all the possibilities of the normal sweep measurement
- Wiring diagrams, tips and tricks in the help system

## **Thiele & Small Measurement**

- Determining of all the Thiele & Small Parameter
- Determining via reference cabinet or extra mass
- Forcing of Rdc or automatic determining
- Wiring diagrams, tips and tricks in the help system

## **Distortion measurement vs. frequency**

- Adjustings like the normal distortion measurement
- Sweep adjustings like the normal level sweep measurement
- Wiring diagrams, tips and tricks in the help system

## **Distortion vs. Level, Power**

- Adjustable test frequency
- Adjustable count of test steps
- Adjustable voltage or power range
- Level up/down measurement
- Separate curves for single harmonics
- Adjustable test level for first checkpegel
- Adjustable bridged or normal amplifiers
- Adjustable load resistor
- Debug window available
- Wiring diagrams, tips and tricks in the help system

## Impulse measurement

- Choice of the stimulus (Dirac, MLS, Burst)
- Reference measurement
- Continuous measurement
- 2 channel measurement
- Phase measurement possible
- Group delay measurement possible
- Measurement with external impulses possible
- Automatic detection of external impulses
- Manual calculation possible
- FFT begin adjustable
- Adjustable trigger level (via time diagram)
- Impulse magnifier (time diagram)
- Adjustable echo point (via time diagram)
- Also available in 3D (waterfall diagram)
- Wiring diagrams, tips and tricks in the help system

## Oscilloscope

- Adjustable diagram colors
- Simulated beam focus
- Screen settings
- Adjustable X-Position
- Timebase from 20 $\mu$ s/div to 200ms/div
- Auto trigger, manually trigger
- Adjustable trigger delay
- Adjustable trigger slope
- Adjustable trigger channel
- Level from 100 $\mu$ V to 500mV \* \*\*
- Adjustable Y-Position
- Channel could be switching on/off, inverted, grounded and added
- Wiring diagrams, tips and tricks in the help system

\* System must be calibrated.

\*\* All values are calculated, there is no electrical voltage divider!

## Wavegenerator

- Sine, square and triangle wave forms
- Pink and white noise
- Sine burst, adjustable count of waves and frequency
- Dirac and MSL Impulse, adjustable Dirac and MLS size
- Dual sine adjustable in level and frequency
- The two signals can be added, multiply and separate the the two stereo channels
- Wavesynthese via formel interpreter with many mathematical function and variables. Test dialog available. Function only for licensed users
- Maximal frequenz:  $SF/2$  depends on max. Samplefreq.
- Adjustable digitaly level

## Presets

You can store all adjustments into a Preset. In the presets is stored the analyse settings, the FFT settings, the wavegenerator settings, the measurement mode settings, the color setting ... The presets are normal text files.

## Diagramm

- Changing the scales, also during a running measuerement.
- Changing the scales with scroller or numeral
- Linear or logarithmical diagram in x and y direction
- Up to 8 different Y-axis
- Adjustable colors for the diagram
- Automatic (default) or manuel Y-Scales
- Automatic diagram adjustment to [0dB@1kHz](#) or [0dB@max.Value](#)
- Cursor measurement of level, frequency and slope
- Adjustable factors and units for the x-axis
- Selectable font
- Pink Noise Filter for the diagram
- More display filters with the analyse dialog
- Rotating 3D diagram
- 3D Grid and surface design
- 3D up to 64 time ribbons
- 3D-Filter none, smooth ...

- 3D X and Y-Achse adjustable
- Diagram printable
- Saving diagrams as BMP and JPG pictures
- Export diagram values to CSV files
- Clipboard support for diagrams

## Curves

- Adjustable line color
- Adjustable line width
- Adjustable line mode (dotted ...)
- Adjustable line curve filter (normal, smooth, terce )
- Loading and saving of curves
- Swtch lines on and off
- Setting curves to one of 8 Y-axis
- Y-axis also logarithm
- Curve linking possible (Add., Subtr., Multi., Div., Peak)

## Sound cards

Separate sound cards for in- and output possible.

## SoundDLL

The audioTester Application access with the SoundDLL and with the windows driver to the sound card .

There are 4 SoundDLLs available:

SoundDirect Access via DirectX      default  
 SoundWave Access via mmsystem      for older Windows versions  
 SoundAsio Access via ASIO driverr      for low latency  
 SoundFile      only tone output to a wave file

## Correction files

Cheap sound cards and also measurement microphone can corrected in the frequency response

## **Calibration**

For some measuring mode is necessary to calibrate the input and the microphone