audioTester V3.0 Features

U.Müller / Mai 2010

Contens

General

This Document will show all possibilities of the audioTester.

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

Spectral Analysies

- 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 analysies there are many measurement available

- Level values
- Distortion values
- Signal to Noise (S/N Ratio)
- Modulation Distortions
- Wow & Fluttermeasurement

Level measurement units

- dBFS
- dBV   *
- dBu   *
- dBm   *
- dBSPL   *
- Pa   *
- mV   *
- Sone (cominig 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 possibities 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 resitor
- Debug window available
- Wiring diagrams, tips and tricks in the help system

Impulse measurement

- Choice of the stimulus (Dirac, MLS, Burst)
- Reference measurement
- Continous measurement
- 2 channel measurement
- Measurement with external impulses possible
- Automatically 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 20µs/div to 200ms/div
- Auto trigger, manually trigger
- Adjustable trigger delay
- Adjustable trigger slope
- Adjustable trigger channel
- Level from 100µV to 500mV * **
- Adjustable Y-Position
- Channel could be switching on/off, inverted, grounded und added
- Wiring diagrams, tips and tricks in the help system

* System must be calibrated.

** All values are calculated, there is no electriacl 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, mulitply and separate the the two stereo channels

- Wavesynthese vio 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

- Saveing 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 is necessary to calibrate the input and the microphone