Listen

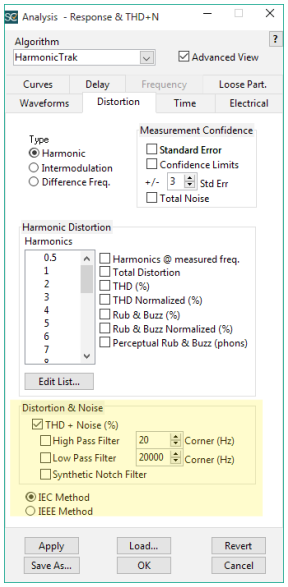
SoundCheck®
Audio Test and Measurement System

SoundCheck® 16/16.1 New Features

This feature-packed Windows/Mac release includes several new features and algorithms for distortion measurements, a new frequency counter, optional strip chart recorder that emulates a traditional strip chart and more. There are also improvements on the usability side including increased setup automation and control via Python.

Frequency Trigger

The new frequency trigger allows frequency-based triggering of acquisition from an external source using a pilot tone at the beginning of a test sweep. This allows for improved accuracy over previous level-based triggering when capturing responses from a device where you don't have direct access to the microphone or speaker. This is otherwise known as Open Loop testing for Smart Speakers and other voice-controlled devices.



Faster & more accurate THD+N analysis algorithm

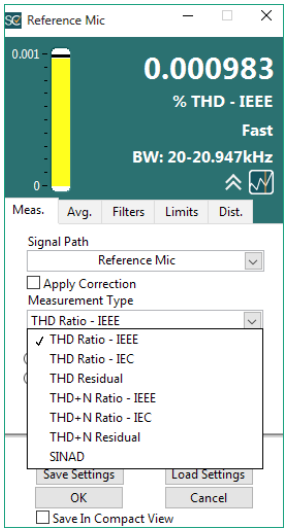
Listen's completely re-designed THD+N analysis algorithm is compliant with the AES17 standard, and is more accurate and significantly faster than other audio test systems. High accuracy is achieved, even with short and/or low level test signals, through the use of a synthetic notch filter - an extremely precise digital notch filter. A traditional notch filter option is also offered to enable correlation with measurements made on legacy systems. The algorithm also includes high and low pass filters for controlling the measurement bandwidth and for filtering noise in electronic measurements.

New Real Time Distortion Analyzer (optional module)

A new distortion analyzer provides continuous real time measurement of output distortion including THD and THD+N, THD and THD+N residual level and SINAD. A, B, and C weighting filters along with user-defined arbitrary weighting functions can be used. Data from the distortion analyzer can also be saved to the memory list. This enables distortion to be quickly viewed without having to set up a sequence. With the optional strip chart recorder, distortion can also be viewed over time.

New Frequency Counter (optional module)

The new high resolution frequency counter offers an accurate and clear visual indication of frequency, determining the dominant signal in a selected signal path and returning a precise frequency measurement. This measurement can be saved to the memory list and can be used in a sequence, for example for triggering a measurement at a certain frequency. This feature is useful for calibration (e.g. calibrating audiometers), for testing playback systems to ensure that they are playing back audio at a constant rate, and for any other application requiring a high-precision frequency measurement.

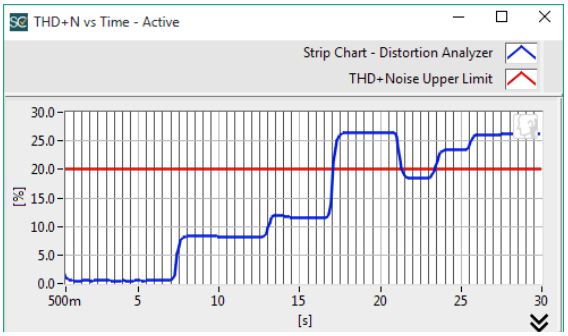


Save to Memory List for All Meters

The multimeter, distortion analyzer and frequency counter can all now save results to the memory list, even when used interactively. This enables an instantaneous measurement to be recorded without having to run a sequence, and also enables these saved values to be used within sequences.

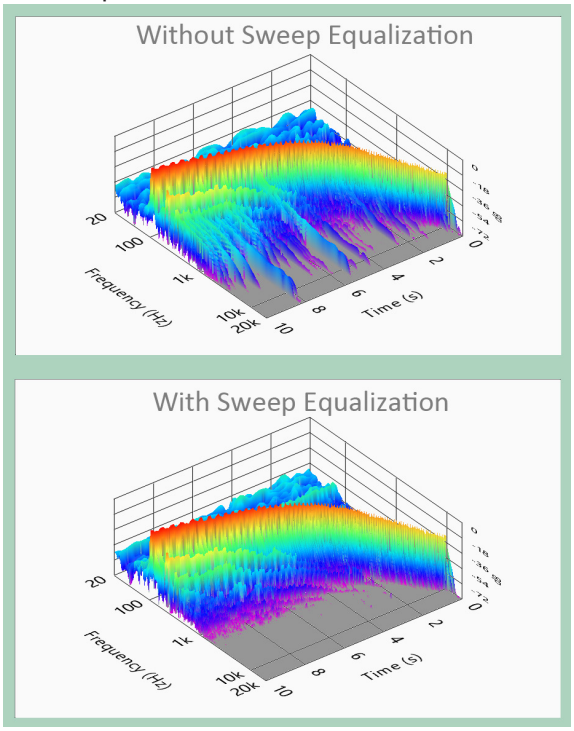
New Strip Chart Recorder (optional module)

The Strip Chart Recorder module provides the multimeter, distortion analyzer and frequency counter the ability to plot measurements over time. This functionality is directly equivalent to connecting a paper chart recorder to a classic, stand-alone hardware instrument. The Strip Chart Recorder can plot continuously or for a predefined amount of time and can plot instantaneous results or repeating averages. This is an invaluable feature for environmental and reliability testing and for any engineer



SoundCheck® 16.0 New Features (cont.)

that needs to characterize the behavior of a device over time. Results from the Strip Chart Recorder can be saved to the memory list and used inside a sequence just like any other virtual instrument.



Sweep Equalization for Minimized Transients

In stepped sine amplitude and frequency sweeps, selecting equalization now also enables a smooth transition between steps. These smooth transitions minimize the transient response in the device under test. This results in shorter test times, smoother sounding sweeps, and is particularly useful for microphone testing where a source speaker needs to be equalized.

Upgraded Multimeter

The multimeter has a new, fixed or auto-tracking bandpass filter option. This is useful for measuring a specific signal in the presence of background noise. In addition a new 'Linear Repeating' averaging mode is available. In this mode a linear average is made and then repeated. This is useful when, for example, you would like to plot a repeating 1 second Leq of the environmental noise level.

Simplified Setup

SoundCheck automatically scans for new devices and setting changes when opened, and updates the Hardware Editor, Audio Hardware and Listen Hardware Tabs. This makes setup much faster. The ability to also manually adjust hardware setup and preserve 3rd party hardware settings offers flexibility and makes it easier to integrate Listen and 3rd party hardware. To simplify audio interface setup, sample rates are restricted to the selection valid for that device. If changes are made during a SoundCheck session, a simple 'refresh' will scan for changes and update the settings.Software installation for multiple systems is also simplified; when pointing to a folder of multiple status.dat files in the setup wizard, the correct status.dat file is automatically selected based on the connected hardware key.
A new conversion tool facilitates updating custom VIs from an older version to the latest version of SoundCheck by automatically re-linking the appropriate vi and ctl files, saving time over doing it manually.



Outline ET250-3D Turntable Control

Custom Steps are available to control the Outline Turntable model ET250-3D, and an example sequence is available.

SoundCheck Control Via Python

SoundCheck can be controlled via Python, an object-oriented scripting language that offers some advantages over C++. An included example (which can be used as a starting point and modified) demonstrates the simplicity of controlling SoundCheck using Python. Compatible with Python 2 and 3, this script opens SoundCheck, loads and runs the "Complete Test" sequence, and passes results back to the Python script for further processing.

Externally Launch and Close Virtual Instruments

A new virtual instrument wrapper allows you to open and close virtual instruments from a custom VI or using TCP/IP.

The Exit Status of Custom Steps Is Now Indicated

Like other SoundCheck steps, the Sequence Editor now highlights in red or green whether a custom step completed successfully or not.