AudioTest

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AudioTest generates audio test signals. You can also save audio test signals as AIFF files so that y
audio test CDs.

CAUTION: TESTING AT HIGH OUTPUT LEVEL MAY CAUSE DAMAGE TO YOUR AUDIO DEVIC

Requirements:

- Mac OS X 10.3.9 or later
- Audio output device (built-in speaker, line-out, headphones, etc.)

Features:

- Wave types: sine wave, triangle wave, sawtooth wave, square (rectangular) wave, pulse wave
    wave, anti-aliased square wave, anti-aliased pulse wave, uniform distribution white noise, pi
    Gaussian distribution white noise
- Frequency: fixed, linear sweep, and logarithmic sweep
- Level: fixed, linear sweep, and logarithmic sweep
- Phase shift: ±180 degrees
- Sample rates: 11.025k, 22.05k, 32k, 44.1k, 48k, 88.2k, 96k, 176.4k, and 192k
- Bit depths: 8-bit, 16-bit, 24-bit integers, and 32-bit float
- Channels: mono, stereo, left, and right
- Level meters: peak, RMS (root-mean-square), and average
- Fade in/out option to suppress popping noise
- Save audio test signal as AIFF file
- Scroll wheel support with text edit fields and sliders
- Keyboard shortcuts to adjust various parameters
- Undo/Redo support for parameter changes
- AppleScript scripting support

Installation:

Drag and drop the application icon to the Applications folder on your hard drive.

Registration:

Click the "Register..." button in the main window, and click the "Purchase..." button to purchase with
application, or click the "Visit Web Store" button to purchase at our web store and enter your name
manually.

Controls and functions:

at111figure.png ¨

1. Register button: click to purchase or enter the registration code.
2. Wave Type popup button: choose one of wave types.
3. 4. Pulse width: specify square or pulse wave width (only available to square and pulse wave
5. Sample Rate popup button: choose one of sample rates.
6. Bit Depth popup button: choose one of bit depths (sample resolution).
7. Channel popup button: choose one of channel configurations.
8. 9. Length: specify length of test signal in seconds.
10. Continuous checkbox. The audio signal will be continuously played until you manually stop i
11. Audio Output Device popup button: choose an audio output device.
12. Level type radio buttons: choose either Fixed or Sweep.
13. Fade in/out checkbox: check this box to reduce the popping noise.
14. Level sweep type radio buttons: choose either Linear or Logarithmic.
15. Level value fields: specify level values in dBFS.
16. Level sweep cycle value field: specify the level sweep cycle in seconds.
17. Level At or From slider: specify Fixed at or Sweep from level.
18. Level To slider: specify Sweep to level.
19. Play/Stop button: start/stop audio signal
20. Save button: save audio signal as AIFF file
21. Level Meter type popup button: choose one of level meter types.
22. Peak Hold Level display.
23. Phase shift slider: specify phase shift (only available with stereo) in degrees.
24. Phase shift circular slider: specify phase shift (only available with stereo) in degrees.
25. Level Meter display: left and right channel level meters.
26. Frequency/Level/Length display.
27. Frequency To slider: specify Sweep to frequency.
28. Frequency At or From slider: specify Fixed at or Sweep from frequency.
29. Frequency sweep cycle value field: specify the frequency level sweep cycle in seconds.
30. Frequency value fields: specify frequency values in hertz.
31. Frequency sweep type radio buttons: choose either Linear or Logarithmic.
32. Frequency type radio buttons: choose either Fixed or Sweep.

Instructions:

To choose an audio output device, open the AudioTest application, click on the Output popup butto
AudioTest window, and select one of the audio output devices. To change the master output volume
output device, choose the "Sound Preferences..." menu item from the AudioTest menu or press co
the "Output" tab, and change the Output volume slider.

**NOTE: The Output volume in the Sound Preferences panel is disabled with some audio outp
to the user's manual that came with your audio output device.**

soundoutputprefs.png ¨

Before you play or save an audio test signal, specify wave type, sample rate, bit depth, channel, fre
length.

NOTE: The sample rate and bit depth settings may not be the actual sample rate and bit depth of t
uses. To set the actual sample rate of the audio output device, use the Audio MIDI Setup applicatio
AIFF file always uses the sample rate and bit depth settings. 8-bit, 16-bit, and 24-bit are integer, an
The AIFF file generated by AudioTest with the bit depth 32-bit is actually an AIFC file with the comp
floating point" which is not really compressed but it is to clarify whether the 32-bit data type is an in

To play an audio test signal, click the Play button, choose the Play menu item from the File menu, o
stop the audio test signal, click the Stop button, choose the Stop menu item from the File menu, or
it's playing.

To save an audio test signal as an AIFF file, click the Save button, choose the Save as AIFF menu
or press command - S (click the Stop button first if it's playing the audio test signal), then modify the
choose the destination, and click the Save button in the Save panel.

Keyboard shortcuts:

• command - R	Show the Registration panel
• command - , (comma)	Show the Sound preferences panel
• command - P	Play/Stop the test signal
• command - S	Save the test signal as an AIFF file
• command - T	Toggle Continuous state on/off
• command - [	Select previous wave type
• command -]	Select next wave type
• command - U	Up the fixed frequency 1 hertz
• command - D	Down the fixed frequency 1 hertz
• command - shift - U	Up the fixed frequency 10 hertz
• command - shift - D	Down the fixed frequency 10 hertz
• command - →	Forward the phase 1 degree
• command - ←	Back the phase 1 degree
• command - shift - →	Forward the phase 10 degree
• command - shift - ←	Back the phase 10 degree
• command - ↑	Up the fixed level 1 decibel
• command - ↓	Down the fixed level 1 decibel
• command - shift - ↑	Up the fixed level 10 decibel
• command - shift - ↓	Down the fixed level 10 decibel
• command - F	Toggle Fade In/Out on/off

Scroll wheel support:

If your mouse has a scroll wheel, you can adjust each test signal parameter by moving the mouse
slider and turning the scroll wheel.

- scroll wheel — Up/Down by 1 per tick
- option - scroll wheel — Up/Down by 10 per tick
- command - scroll wheel — Up/Down by 100 per tick
- control - scroll wheel — Up/Down by 1/10 per tick
- shift - scroll wheel — Up/Down by 1/100 per tick

Waveform descriptions:

- Sine (sinusoidal) wave: Also known as a pure tone. Theoretically -3.01dB RMS and -3.93dB A
- Triangle wave: Contains only odd harmonics. Theoretically -4.77dB RMS and -6.02dB Average
- Sawtooth wave: Looks like the teeth of a saw. Contains odd and even harmonics that fall off a
- Square (rectangular) wave: Bipolar square wave (two-state: +max and -max). Contains only o
- Pulse wave: Positive and negative pulse wave (three-state: +max, zero, and -max).
- White noise: Uniform distribution white noise. Approximately -4.77dB RMS and -6.02dB Avera
- Pink noise: -3dB/octave or -10dB/decade. Approximately -12.5dB RMS and -13.5dB Average a
- Brown noise: -6dB/octave or -20dB/decade. Approximately -13dB RMS and -15dB Average at
- Gaussian noise: Gaussian distribution white noise. Approx. -13.83dB RMS and -15.79dB Ave.

The anti-alised waveforms contain samples that are not +max or -max for the square waves for exa
the inharmonics.

Here are the samples of waveforms shown by WaveWindow AU (shareware by Laidman & Katsura
playing the generated AIFF files by AudioTest.

sine440.gif ¨ tri440.gif ¨
Sine wave (left) and Triangle wave (right).

saw440.gif ¨ sq440.gif ¨
Sawtooth wave (left) and Square/Pulse 100% width wave (right).

sq50%440.gif ¨ pl50%440.gif ¨
Square 50% width wave (left) and Pulse 50% width wave (right).

white.gif ¨ pink.gif ¨
White noise (left) and Pink noise (right).

brown.gif ¨ gaussian.gif ¨
Brown noise (left) and Gaussian white noise (right).