

## SOUND CLEANER

Professional real-time, noise cancellation and speech enhancement software

### Functional Features

Sound Cleaner is unique software for filtering of noise-corrupted sound recordings and improvement of speech intelligibility. The user can adjust the filtering parameters and hear the changes made in real-time.

Novices and professionals dealing with corrupted or noisy speech recordings can use Sound Cleaner effectively to substantially improve clarity of speech.

Signal is processed by a sequence of modules. There are 14 typical schemes of processing available; you may also build customized schemes for noise filtering.

All modules work simultaneously in sequence, and all options are adjustable in real-time while listening to the output.

- ◆ 2048 manually adjustable equalizer sliders
- ◆ Adaptive broad band noise filter
- ◆ Adaptive inverse filter
- ◆ Adaptive tones (harmonics) filter
- ◆ Adaptive pulse-like interferences filter
- ◆ New method of dynamic processing
- ◆ Adaptive stereo filters:
  - 3 in frequency domain
  - 1 in time domain

### Advantages

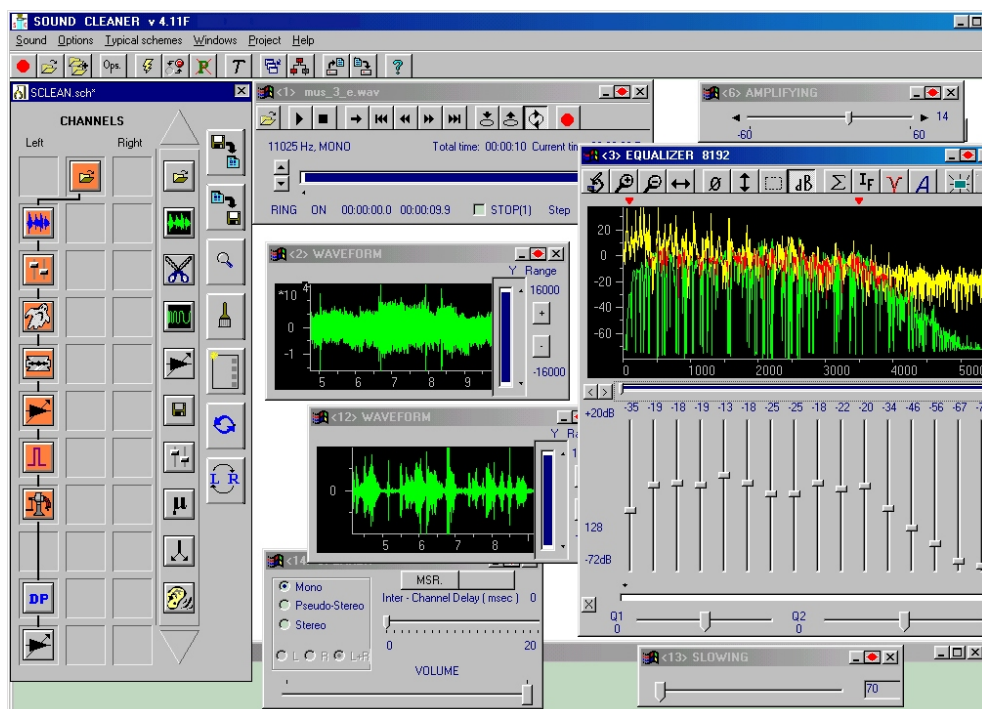
The main advantage of this compact and user-friendly software is that it enables the user to input an audio signal, to listen to it, to process it, to adjust filters parameters, to store the result on the hard disk or to record into a cassette **SIMULTANEOUSLY!**

*Sound Cleaner is successfully used both by novices and professionals*

*Each process has a separate window with controls.*

*All adjustments can be done in real time, i.e. while you are listening to a recording or live voice.*

*There are also 9 adaptive filters & several other procedures, the user can use to see waveforms and FFT spectrum of the source & processed signals. The user can make a specific sequence of processes using only those methods that s/he needs. Several windows of the same process can be created.*



## Advantages

- ◆ All methods can work simultaneously
- ◆ Every method may be switched on/off at any time
- ◆ Every control may be adjusted in real time
- ◆ Sound Cleaner can create a report of modules and settings, used to process a particular record.
- ◆ Set of processing schemes gives guidance in defining what noise is present, what modules to turn on and how to tune them
- ◆ Effective for both restoration and enhancement of poor quality records, records made in noisy environment and real-time sound loaded from an external source.

## Requirements

Recommended:

- ◆ Celeron or Pentium III 300MHz or higher
- ◆ RAM from 64Mb. 128 Mb recommended
- ◆ Video VGA or SVGA 1024x768 and above
- ◆ HDD from 15 Gb
- ◆ About 15 MB of free disk space is required for the program installation
- ◆ Windows 9x, NT, XP, 2000
- ◆ 16bit duplex Windows-compatible sound card

## Available Packages

- ◆ **Sound Cleaner Premium**  
*Premium package containing all filters and processing modules (a unique set of adaptive stereo filters inclusive)*
- ◆ **STC Training Courses** STC experts provide basic and advanced training in speech enhancement, audio analysis, speaker identification, and other forensic audio subjects. Consultancy and training can be tailored to customer needs. Extensive covering of critical examination issues as well as hands-on practical classes. Focused upon real-life challenges rather than on user-level.

Available for online purchase:

- ◆ **Sound Cleaner Light** *including basic set and 2 adaptive filters*
- ◆ **Sound Cleaner Equalizer** *including equalizer and basic set*

## Features

- ◆ The user has the ability to see the waveforms and FFT spectrums of the source signal and secondly the processed one.
- ◆ Playback speed can be increased or decreased up to 2-3 times without voice pitch distortion or speech quality losses.
- ◆ Amplification range is -60...+60dB. When the signal level after processing drops down, setting a higher gain value is very useful.
- ◆ Volume control & pseudo-stereo mode for sound playback provides for comfortable listening.
- ◆ Broadband and narrowband noise, stationary and non-stationary noise can be eliminated completely.
- ◆ Interferences such as, telephone lines, engine noise, home/office appliances, industrial equipment, street, car and aircraft noise, power supply influence, hum and hiss, room echo and reverberation, can be eliminated.
- ◆ Standard multimedia sound card can be used as a sound source and playback device.
- ◆ Sound file (\*.wav) or analog audio recording can be processed. The user can listen to the result and store it to the file simultaneously.
- ◆ Sound Cleaner is offered as a module in IKAR Lab - workstation for advanced audio/ speech signal analysis, processing, noise cancellation, speaker identification with its core program SIS - Speech Interactive Software. Caesar - text decoding software, can also be included in the software set.
- ◆ The graphic equalizer supports 8192 bands and has 2048 sliders and allows the user to suppress narrow bands (2.5 Hz) down 72 dB. The equalizer can be adjusted to the input sound spectrum manually and automatically.
- ◆ The adaptive broadband filter is easy to use. It cancels the most kinds of home/office equipment noise. The broadband noise is suppressed down 10-20 dB.
- ◆ The adaptive inverse filter automatically suppresses narrowband noise. It is effective for non-stationary hindrances.
- ◆ The adaptive frequency compensation uses the Widrow algorithm in the frequency area. A very large number of coefficients (8,192) provides the suppression of many mixed types of noise.
- ◆ The dynamic processing deals successfully with the recordings of speech at different volume levels as well as with other distortions.
- ◆ The stereo filtering in time (1 method) & frequency domain (3 methods) provides particular means against distributed interference (radio, TV, concert, bar environment) or point-source noise.