SPEECH ENHANCEMENT

GritTec's Noise Cancellation

Overview

GritTec's Noise Cancellation (Version 2.00) of speech enhancement is used for reducing the external hindrances and background noises in speech signal. GritTec's NC can be used as for the selection of speech signal, so and for the selection of background noises.

GritTec's NC is recommended to use in case of an amount of hindrances is unknown beforehand or it is impossible in the evident type to select "point" source of hindrances (absent-minded hindrance). Filter noise cancellation is automatically adapted under all types of surrounding hindrances and selects a refined of speech signal. GritTec's Noise Cancellaion can be effectively applied for:

- suppression of street noises;
- suppression of office noises (fan noise, computer noise, background speech and so on);
- suppression of a various sort of mechanical noises, such as noises of avto-moto technics;
- suppression of industrial noises;
- suppression of channel distortions and noises arising in a consequence of coding and transfer of a speech signal on analogue and digital communication channels (VoIP);
- suppression of other broadband noises.

Applications

- Wireless telephony systems;
- VOIP telephony;
- Voice messaging services (voice mail);
- Mobile phones or without "hands free" system;
- Call service centers.

Features

- High quality of speech enhancement;
- Low level of speech distortion;
- Operation with low level SNR;
- Separation as cleaned speech signal, so and background noise;
- Controlled level of noise suppression in speech, including broadband color noises up to 60 dB;
- Possibility of using a graphic equalizer for removing the stationary hindrances;
- Easy integration with target applications.

Signal requirement

- Signal format: 16-bits linear;
- 6 kHz, ..., 48 kHz sampling rate.

Resource Requirements

RESOURCES	GOAL	NOTES
RAM	82 kBytes	Pointer to the general structure.
ROM	~ 100 kBytes	Parameters of void and tempo procedures.
Resource/Source Ratio* (MIPS)	~ 1.35	For signal with sampling rate 8 kHz.
Resource/Source Ratio* (MIPS)	~ 1.72	For signal with sampling rate 16 kHz.
Resource/Source Ratio* (MIPS)	~ 2,80	For signal with sampling rate 32 kHz.

* - for Intel PIII 1,5 GHz.

Availability

- PC demo for MS Windows;
- SDK for x86, x64 platforms with object code or ANSI C/C++ float point code is available on request;;
- Portability to any DSP or ARM platforms.

GritTec Laboratory (GritTec Ltd.) specializes on research and development of algorithms and technologies in the field of speech and audio processing. GritTec's research is focused on speech enhancement, speech concealment, voice biometric, speech recognition, speech synthesis and other speech and audio technologies.

Contacts