



NoiseMuter®

Compandent's Adaptive Noise Canceller

Compandent provides a suite of signal processing technologies, algorithms, and technical expertise for voice and audio compression and enhancement, for providing state-of-the-art voice and audio communications.

Operation

Compandent's NoiseMuter® Adaptive Noise Cancellation (ANC) is an advanced algorithm designed to continuously and adaptively remove Adaptive Noise from speech.

Noises exists in real-world environments, and they may degrade the quality of communicated speech, especially when the transmitted speech is needed to be compressed. Background noise sounds may change over time, which makes them more perceivable and annoying. By continuously tracking changes of the noise characteristics, NoiseMuter effectively eliminates the noise, enhancing quality and improving the clarity of the communication system.

NoiseMuter is extremely effective against loud background noises experienced in such systems as security and military communication,

car phones, hands-free cellular telephony, Internet telephony and audio and video conferencing.

Tables

Table 1 and 2 illustrate Compandent's (TMS320c5510 and TMS320c54xx) NoiseMuter MIPS and memory requirements, respectively.

Performance

- Convergence rate < 1 second
- Full-duplex operation,
- Demo is available on our web site.

Implementation

NoiseMuter is an adaptive, algorithm designed as an add-on software module. The algorithm has been developed using ANSI C to facilitate porting to each customer's platform of choice. This code will run on any platform with an ANSI C compiler and includes documentation, test programs. We also provide real-time hand optimized Assembly implementation (C callable) on Texas Instruments DSPs such as c54xx, c55xx, and OMAP.

Available features:

The NoiseMuter software suite includes the following features:

- Available as add on software module under Microsoft™ Windows®, Apple™ Mac®, Linux, or any other operating system having ANSI C/C++ compiler,
- Hand optimized Assembly DSP real-time implementation,
- C-callable high-level functions
- Example of main C program that initializes and runs the NoiseMuter functions,
- Comprehensive and detailed documentation that allows for smooth and easy integration
- Compandent support and service,
- Very low-cost (\$395) complete DSP development board and tools (CCS) on which Compandent's NoiseMuter may run.
- Comprehensive and spectacular Real-Time demo, using DIP-switch control and LED indicators

Compandent's support:

Production of custom versions, as well as assistance with integration and porting of this algorithm, is available through Compandent's support and consultancy service

| ProcessRate | MIPS |
|-------------|------|
| NoiseMuter | 17 |

Table 1: Compandent's NoiseMuter (c55xx or c54xx) MIPS

| Algorithm \ Memory | Data (Vars.) | Data (Table) | Program |
|--------------------|--------------|--------------|---------|
| NoiseMuter | 10.0K | 0.5K | 4.5K |

Table 2: Compandent's NoiseMuter (c55xx or c54xx) memory requirements in 16-bit words

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