

Noise Reduction Gen 2

Second Generation Noise Reduction Algorithm

PRODUCT DESCRIPTION

The Adaptive Digital second-generation noise reduction (NR Gen 2) software is better at reducing background noise in speech signals under such circumstances where the background sound intensity levels are high. The algorithm can be customized to trade-off between complexity, memory requirements, and required noise reduction. Higher MIPS is the trade-off for the better performance over Adaptive Digital's NR Gen 1 algorithm.

APPLICATIONS

Gen2 noise reduction is an excellent choice for applications with high background noise environments. Applications include traditional, mobile, and hands-free telephone systems, conferencing, speech recognition, and alarm systems.

FEATURES

- User configurable
- Enhances Voice Quality
- Functions are C-callable
- Designed for multiple channel operation

AVAILABILITY

ADT NR G2 is available on the following Platforms: *Other configurations are available upon request.*

| Product Number | Platform | Memory Model | Endian* | Code Gen Tool Version |
|------------------------|----------------------|--------------|---------|-----------------------|
| ADT_NR2_c64xp | TI TMS320C64x+ | MmL3 | Little | N/R |
| ADT_NR2_c64x | TI TMS320C64x | MmL3 | Little | N/R |
| ADT_NR2_c55x | TI TMS320C55x | MmL3 | N/A | N/R |
| ADT_NR2_win32s | Windows Static | N/A | N/A | VS2005 |
| ADT_NR2_win32d | Windows DLL | N/A | N/A | VS2005 |
| ADT_NR2_cortex-a8/9/15 | ARM Cortex A8/A9/A15 | N/A | little | N/R |

*Endian, byte order: "Little Endian" means that the low-order byte of the number is stored in memory at the lowest address, and the high-order byte at the highest address. "Big Endian" means that the high-order byte of the number is stored in memory at the lowest address, and the low-order byte at the highest address.

Acronyms

NR – Noise Reduction

Mm – Memory Model: Memory Model is specific to Texas Instruments processors.

N/A – Not Applicable

N/R – Not Recorded

SPECIFICATIONS

TI TMS320C6000**C64x / C64x+ / C66x / C 674x****CPU UTILIZATION & MEMORY REQUIREMENTS**

All Memory usage is given in units of byte.

| Processor | Function | MIPS (Peak) (180 Sample frame) | Program Memory | Scratch Memory | Tables | Per-Channel Data Memory |
|-----------|----------|-----------------------------------|----------------|-------------------|--------|----------------------------|
| C64x | Reduce | 14.1 | 37536 | 5670 | 4332 | 11960 |
| C64x + | Reduce | 13.8 | 30656 | 5670 | 4332 | 11960 |

TI TMS320C5000**C55x****CPU UTILIZATION & MEMORY REQUIREMENTS**

All Memory usage is given in units of byte.

| Function | MIPS (Peak) | Program Memory | Scratch Memory | Tables | Per-Channel Data Memory |
|----------|-------------|----------------|----------------|--------|----------------------------|
| Reduce | 20 | 11731 | 7720 | 3308 | 11976 |

ARM DEVICES**Cortex-A8/A9/A15****CPU UTILIZATION & MEMORY REQUIREMENTS**

All Memory usage is given in units of bytes.

| Function | MIPS | Program Memory | Data Memory | Per Channel Data Memory | Scratch Memory |
|----------|------|----------------|-------------|----------------------------|----------------|
| | 32.5 | 68.2K | 2168 | 11960 | 5668 |

WINDOWS**WIN32****CPU UTILIZATION & MEMORY REQUIREMENTS**

All Memory usage is given in units of bytes.

| Function | MIPS (average) | Program Memory | Data Memory | Per Channel Data Memory | Scratch Memory |
|----------|-------------------|----------------|-------------|----------------------------|----------------|
| Reduce | 36 | 48,000 | 2156 | 5670 | 11961 |

FUNCTIONS

API function call summary

| | |
|-------------------------|---|
| NR_ADT_getSizes() | Get sizes of Channel and Scratch |
| NR_ADT_init(. . .) | Initiates a channel with default parameters |
| NR_ADT_initWithParam() | Initiates a channel with custom parameters |
| NR_ADT_reduce(. . .) | Executes Noise Reduction |

Deliverables

The deliverable items are platform dependent. In general, there is one library. (Sometimes multiple variants of the library are included in the deliverables.) There are also header files, some of which are specific to the product and others are common across many of Adaptive Digital's products. Also included in the deliverables is product documentation, which includes a users guide and usually includes release notes and a data sheet. Sample/test code may be included as well.

Adaptive Digital is a member of the Texas Instruments Developer Network, and ARM Connected Community.

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